

JVC



DVD / HDD VIDEO RECORDER & VIDEO CASSETTE RECORDER

DR-MX1S



HDD

COMPACT
disc
SUPER VIDEO

DVD
VIDEO
RAM/RW

DOLBY
DIGITAL

dts
DIGITAL OUT

i

Hi-Fi

VHS

VCRplus+[®]
CABLE BOX
CONTROL

SQPB

INSTRUCTIONS

For Customer Use:

Enter below the Model No. and
Serial No. which are located on the
rear of cabinet. Retain this
information for future reference.

Model No. _____

Serial No. _____

Dear Customer,

Thank you for purchasing the JVC DVD / HDD video recorder & video cassette recorder. Before use, please read the safety information and precautions to ensure safe use of your new unit.

Cautions

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION:

A UNIT IS A CLASS 1 LASER PRODUCT. HOWEVER THIS UNIT USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE UNIT CORRECTLY AS INSTRUCTED.

WHEN THIS UNIT IS PLUGGED INTO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS UNIT.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

CLASS 1 LASER PRODUCT

REPRODUCTION OF LABELS

WARNING LABEL INSIDE OF THE UNIT

CAUTION

VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.

ADVARSEL

SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGA UDSÆTTELSE FOR STRÅLING SE IKKE IND I STRÅLEN - HELLER IKKE MED OPTISKE INSTRUMENTER.

ADVARSEL

SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNDGA EKSPONERING FOR STRÅLEN STIRR IKKE INN I STRÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTER.

VARO!

AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.

VARNING

SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION:

This unit should be used with AC 120V~, 60Hz only.

To prevent electric shocks and fire hazards, DO NOT use any other power source.

CAUTION:

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION:

POUR ÉVITER LES CHOCs ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

CAUTION:

Changes or modifications not approved by JVC could void user's authority to operate the equipment.

Important product safety instructions

Electrical energy can perform many useful functions. But improper use can result in potential electrical shock or fire hazards. This product has been engineered and manufactured to assure your personal safety. In order not to defeat the built-in safeguards, observe the following basic rules for its installation, use and servicing.

ATTENTION:

Follow and obey all warnings and instructions marked on your product and its operating instructions. For your safety, please read all the safety and operating instructions before you operate this product and keep this booklet for future reference.

INSTALLATION

1. Grounding or Polarization

(A) Your product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.

If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

(B) Your product may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

2. Power Sources

Operate your product only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. If your product is intended to operate from battery power, or other sources, refer to the operating instructions.

3. Overloading

Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

4. Power Cord Protection

Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

5. Ventilation

Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.

- Do not block the openings by placing the product on a bed, sofa, rug or other similar surface.
- Do not place the product in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

6. Wall or Ceiling Mounting

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

ANTENNA INSTALLATION INSTRUCTIONS

1. Outdoor Antenna Grounding

If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding connectors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

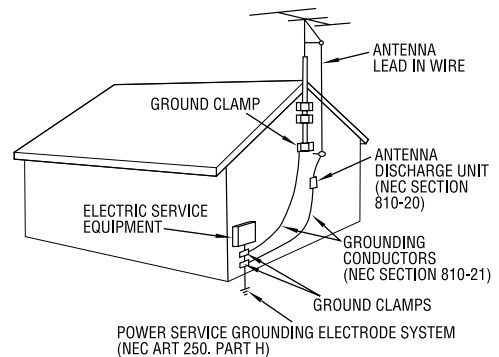
2. Lightning

For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

3. Power Lines

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE, ANSI/NFPA 70



NEC – NATIONAL ELECTRICAL CODE

USE

1. Accessories

To avoid personal injury:

- Do not place this product on an unstable cart, stand, tripod, bracket, or table. It may fall, causing serious injury to a child or adult, and serious damage to the product.
- Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product.
- Use a mounting accessory recommended by the manufacturer and follow the manufacturer's instructions for any mounting of the product.
- Do not try to roll a cart with small casters across thresholds or deep-pile carpets.

2. Product and Cart Combination

A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

3. Water and Moisture

Do not use this product near water—for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool and the like.

4. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

5. Attachments

Do not use attachments not recommended by the manufacturer of this product as they may cause hazards.

6. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

7. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

PORTABLE CART WARNING
(Symbol provided by RETAC)



SERVICING

1. Servicing

If your product is not operating correctly or exhibits a marked change in performance and you are unable to restore normal operation by following the detailed procedure in its operating instructions, do not attempt to service it yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

2. Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance—this indicates a need for service.


3. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or which have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

4. Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating condition.

HOW TO USE THIS INSTRUCTION MANUAL

- All major sections and subsections are listed in the Table Of Contents on page 6. Use this when searching for information on a specific procedure or feature.
- The Index on pages 12 – 15 illustrates the controls and connections on the front and rear panel, the front display panel and the remote control.
- The list of terms on page 97 lists frequently-used terms, and the number of the page on which they are used or explained in the manual.
- The  mark signals a reference to another page for instructions or related information.
- Operation buttons necessary for the various procedures are clearly indicated through the use of illustrations at the beginning of each major section.

BEFORE YOU INSTALL YOUR NEW UNIT . . .

. . . please read the sections/literature listed below.

- “Cautions” on page 2
- “Important product safety instructions” on pages 3 – 5

Declaration of Conformity

Model Number: DR-MX1S

Trade Name: JVC

Responsible Party: JVC Americas Corp.

Address: 1700 Valley Road Wayne, N.J. 07470

Telephone Number: 973-317-5000

This device complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.



- Manufactured under licence from Dolby Laboratories. "Dolby" and double-D symbol are trademarks of Dolby Laboratories.
- "DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.
- VCR Plus+, C³ and PlusCode are registered trademarks of Gemstar Development Corporation. The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.
- DSS™ is an official trademark of DIRECTV, Inc., a unit of GM Hughes Electronics. DISH Network™ is a trademark of Echostar Communications Corporation.
- This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing users only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

When the equipment is installed in a cabinet or a shelf, make sure that it has sufficient space on all sides to allow for ventilation (10 cm or more on both sides, on top and at the rear).

When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.

Failure to heed the following precautions may result in damage to the unit, remote control or disc/cassette.

1. **DO NOT place the unit —**
 - in an environment prone to extreme temperatures or humidity.
 - in direct sunlight.
 - in a dusty environment.
 - in an environment where strong magnetic fields are generated.
 - on a surface that is unstable or subject to vibration.
2. **DO NOT block the unit's ventilation openings or holes.** (If the ventilation openings or holes are blocked by a newspaper or cloth, etc., the heat may not be able to get out.)
3. **DO NOT place heavy objects on the unit or remote control.**
4. **DO NOT place anything which might spill on top of the unit or remote control.** (If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)
5. **DO NOT expose the apparatus to dripping or splashing.**
6. **DO NOT use this equipment in a bathroom or places with water. Also DO NOT place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups, etc.) on top of this unit.**
7. **DO NOT place any naked flame sources, such as lighted candles, on the apparatus.**
8. **Avoid violent shocks to the unit during transport.**

MOISTURE CONDENSATION

Moisture in the air will condense on the unit when you move it from a cold place to a warm place, or under extremely humid conditions—just as water droplets form on the surface of a glass filled with cold liquid. In conditions where condensation may occur, disconnect the unit's power plug from the wall and keep it disconnected for a few hours to let the moisture dry, then turn on the unit.

ATTENTION:

To mobile phone users:

Using a mobile phone in the vicinity of the unit may cause picture vibration on the TV screen or change the screen to a blue back display.

On placing the unit:




Some TVs or other appliances generate strong magnetic fields. Do not place such appliances on top of the unit as it may cause picture disturbance.

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About Discs

Recordable/Playable Discs

You can use discs with the following logos for recording and playback.

 <p>DVD-RAM 12 cm: 4.7 GB/9.4 GB 8 cm: 1.4 GB/2.8 GB Ver. 2.0/2x speed Ver. 2.1/1x – 2x speed</p>	 <p>DVD-RW 12 cm: 4.7 GB/9.4 GB Ver. 1.1/1x – 2x speed (Video mode/VR mode)</p>
 <p>DVD-R 12 cm: 4.7 GB 8 cm: 1.4 GB Ver. 2.0/1x – 4x speed (Video mode)</p>	

- The above table is based on the information as of February 2004.
- Recording and playback may not be performed depending on the characteristics and condition of the disc used, leading to unsatisfactory results. Using discs manufactured by JVC is recommended since they have been tested to be compatible with this unit.

DVD-RAM Discs

It is only possible to use discs which conform with DVD-RAM standard Version 2.0 or 2.1.

- It is impossible to record on DVD-RAM discs which do not conform to this standard. If you use a disc formatted under a different standard version, format it on this unit before use.
- It may not be possible to record, play back, edit or dub a DVD-RAM disc even if it conforms to the standard if it was recorded or edited on the devices from other manufacturers or on a PC, or if it has far too many titles, or if there is very little available capacity remaining on the disc.
- DVD-RAM discs recorded on this unit cannot be played back on an incompatible DVD player.
- It is possible to record copy-once programs of digital broadcasts only onto 4.7/9.4 GB DVD-RAM discs (2.8 GB DVD-RAM discs are not compatible).

DVD-R/RW Discs

It is only possible to use DVD-R discs which conform with DVD-R standard Version 2.0.

When a DVD-R/RW disc (Video mode) is finalized (⏏ pg. 88), it can be played back on a standard DVD player as a DVD VIDEO disc.

When a DVD-RW disc (VR mode) is finalized (⏏ pg. 88), it can be played back on a standard DVD player compatible with the VR mode of DVD-RW discs.

Before finalizing —

— it is possible to record on unrecorded areas of the disc, edit the disc title and program titles, and delete programs.

- It is impossible to record or edit DVD-R/RW discs recorded on other devices even if they have not been finalized.
- It is impossible to overwrite recorded areas of DVD-R discs.
- Available recording capacity does not increase even if a recorded program is deleted from a DVD-R disc.

After finalizing —

After a DVD-R/RW disc (Video mode) has been finalized, it is possible to play back the recorded programs (video and/or audio) on a standard DVD video player as a DVD VIDEO disc.

- Edited titles are displayed as the “DVD menu” in video mode.
- It is impossible to record, edit or delete the data either in video mode or in VR mode.
- Either in video mode or in VR mode, although the disc can be played back on DVD players from other manufacturers, sometimes it may not be possible to play back depending on the disc and recording conditions.
- It is impossible to record on CD-R/RW or DVD-R discs used for authoring.
- It is impossible to record onto DVD-R/RW (Video mode) discs broadcasts that allow you to copy once. The copy once programs can only be recorded onto DVD-RW discs formatted in VR mode.



CONTENTS MENU		PREV
01 SHOGUN PRINCE 02:14:11 0:25 PR12-HDD MDC	14:11:2002	
02 GALAXY ANGEL A #01 EP 06:10 9:30 PR12-HDD	07:10:2002	
03 GALAXY ANGEL A #01 ED 06:10 9:30 PR12-HDD	07:10:2002	
04 FISHING WORLD OP 22:12 20:00 PR3	22:12:2002	
05 FISHING WORLD ED 22:12 20:00 PR3	22:12:2002	
06 RALLY CAR EP 10:04 0:30 PR16	04:10:2002	
07 RALLY CAR ED 10:04 0:30 PR16	04:10:2002	
08 Chobits #04 OP 02:05 PR10	02:05:2002	
09 Chobits #04 ED 02:05 PR10	02:05:2002	
10 Chobits #20 ED 26:09 6:00 PR10 MDC LPCM	26:09:2002	
		NEXT


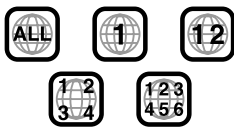








NOTE:

The following may result if you play back a DVD-R disc recorded on another unit.

- The disc does not play.
- A mosaic pattern (block noise) appears on the screen.
- Video or audio may be dropped out.
- The unit stops during playback.

Discs For Playback Only

You can use discs with the following logos for playback only.

 DVD VIDEO (example of region code indications) 	Video CD/Super Video CD    
 Audio CD CD-DA files	 CD-R CD-DA/JPEG/ MP3 files
 CD-RW CD-DA/JPEG/ MP3 files	 CD-ROM JPEG/MP3 files

- Playback may not be performed depending on the characteristics and condition of the disc used.
- DTS Audio CDs can also be played back (An optional DTS decoder is required).
- MP3 and JPEG discs can be played back on this unit only when they have been recorded in the ISO9660 or Joliet format and finalized.
- JPEG files that can be played back on this unit must conform to JFIF/Baseline process, and the maximum resolution of a JPEG file is 2,812 x 2,112 pixels.
- CD-R/RW discs recorded in music CD format need to be finalized to play back on this unit.
- Operation and audio quality of this unit are not guaranteed for discs that do not conform to the Compact Disc specification (CD-DA). Before you play back a CD, check for the CD logo and read the notes on the package to confirm that it conforms to the Compact Disc specification.
- Depending on the intentions of the author of the software, recording conditions of DVD discs and Video CD/SVCD discs may be restricted. Since this unit plays back discs according to the intentions of the author of the software as indicated on the disc, some functions may not operate as commanded.
- When switching from the first layer to the second layer of double-layered DVD VIDEO discs, the image and sound may be momentarily distorted. This is not a malfunction.
- DVD-AUDIO discs compatible with DVD video players can be played.
- Super Audio CDs (SACD) compatible with conventional CD players can be played.

Unplayable Discs

The following types of discs cannot be played using this unit. Do not attempt to play back any kind of disc that is damaged (cracked, warped, or repaired with adhesive tape) or discs in unusual shapes (heart-shaped, octagonal, or other forms). If such discs are accidentally played back, it may cause noise that can lead to speaker damage.

- CD-ROM discs (including PHOTO-CD and CD-G)
- Discs recorded in Packet Write (UDF) format
- 1.3-GB double density CDs (DDCD)
- High density CDs (HDCD)

The following discs also cannot be played back.

- Discs of a region number other than "1"
- DVD-RAM (2.6 GB/5.2 GB)
- DVD-RAM (TYPE1)









Region Number

The world is divided into 6 regions for DVD VIDEO discs. DVD VIDEO discs are assigned a region number to indicate which region they may be played back in. A disc cannot be played back on this unit unless the region number of the disc matches that of the unit. The region number for this unit is "1". Only discs whose region number includes "1" or "ALL" can be played back such as shown below.

Examples of DVD VIDEO labels which can be played back using this unit.



Marks of discs in this instruction manual

 Allows operation with a DVD-RAM disc.	 Allows operation with a Video CD/Super Video CD (SVCD) disc.
 Allows operation with a DVD-R disc.	 Allows operation with an Audio CD disc.
 Allows operation with a DVD-RW disc.	 Allows operation with a disc including MP3 files.
 Allows operation with a DVD VIDEO disc.	 Allows operation with a disc including JPEG files.

Recording Medium And Format

DVD-RAM

- Recording and erasing can be performed as many times as possible on a disc.
- Editing can be performed after recording, such as deleting unwanted parts.
- While recording, it is possible not only to start playback of a program currently being recorded, but also to watch another program previously recorded.

DVD-RW (VR mode)

- Recording and erasing can be performed as many times as possible on a disc.
- Editing can be performed after recording, such as deleting unwanted parts.

DVD-RW (Video mode)

- Can be played back on other DVD players.
- New recording can be performed by erasing all the data on a disc once played back.

DVD-R

- Can be played back on other DVD players.
- Suitable when keeping a recorded disc for a long time.

File Structure Of Discs

DVD VIDEO

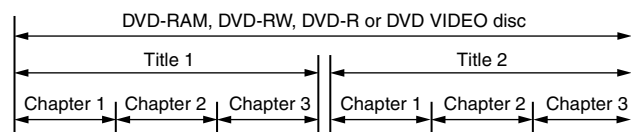
Typically, DVD VIDEO discs are made up of larger units called "titles". Each title has a number (title number) that can be used to select desired titles. Titles are further divided into units called "chapters". Each chapter has a number (chapter number) that can also be used to select desired chapters. Note that some discs are not divided into titles and chapters.

When you record a program on a DVD-RAM/RW (VR mode) disc

A single recording session results in a single title (a single chapter). However, chapter marks are automatically inserted when recording is paused, or audio changes from monaural to stereo due to commercial breaks, etc. It is also possible to insert chapter marks at desired locations during playback. (pg. 29)

When you record a program on a DVD-R/RW (Video mode) disc

A single recording session results in a single title (a single chapter). However, chapter marks are automatically inserted when recording is paused, or audio changes due to commercial breaks, etc. It is also possible to insert chapter marks at desired locations during either recording or playback. Once the disc has been finalized, these chapter marks are deleted and new chapter marks are assigned automatically approximately every 5 minutes.

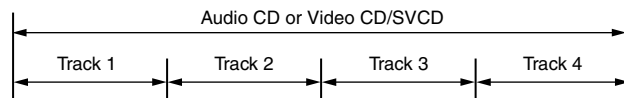


- In Video mode, even before finalizing, it is impossible to perform editing operations other than changing the disc name and/or title names and deleting programs and/or titles.
- After finalizing, it is impossible to perform editing operations.

Audio CD/Video CD/SVCD

Typically, Audio CD discs are divided into separate tracks each containing one song. Each track is assigned a number. For example, the third track is Track 3. The same is true for Video CD/SVCD discs.

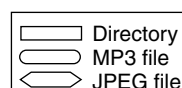
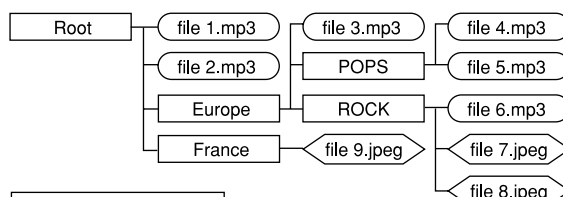
However, some discs are not divided into tracks.



JPEG/MP3 Disc (CD-R/RW/ROM)

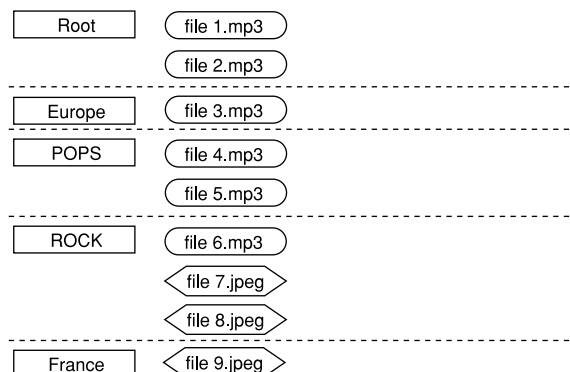
MP3/JPEG files put in directories nested in several levels on a disc will be organized as if they were put in single level directories (groups) by the MP3/JPEG Navigation of this unit. (pg. 69)

File structure of a disc before starting the MP3/JPEG Navigation



File structure of the disc after starting the MP3/JPEG Navigation

Files are automatically grouped as follows and displayed on the MP3/JPEG Navigation screen. Data is displayed in the alphabetical order of file name. Files are grouped based on roots.



- This unit can recognize up to 9 hierarchies including directories and files. Also, it can recognize up to 250 files in each group, and up to 99 groups on a disc.

NOTES:

Video CD/SVCD discs that support Playback Control (PBC)

The contents of a disc are recorded into several hierarchies, and played back according to the instructions on the screen while navigating through the hierarchies. It is also possible to playback recorded tracks consecutively without activating the PBC function even when playing a PBC-compatible disc. (pg. 31)

Regarding the contents recorded on discs

Some files may not be played back depending on the file types and other factors.

DVD VIDEO Marks

Sometimes marks are printed on a DVD disc and/or on its packaging to indicate information regarding the contents and functions of the disc. Check the marks indicating the contents and functions of the disc. Note, however, that in some cases a disc may not include a mark even for a function it supports.

Marks related to video

	Number of subtitles		Number of angles
	Recorded under the standard 4:3 aspect ratio		Screen includes black bands at the top and the bottom of image which has a standard 4:3 aspect ratio (letter box)
	Video playback is in Wide video mode (16:9) on wide televisions, but in letter box on televisions with standard 4:3 aspect ratio.		
	Video playback is in Wide video mode (16:9) on wide televisions, but pan and scan is used on televisions with standard 4:3 aspect ratio (either the left or right side of the image is cut-out).		

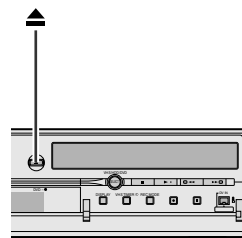
Marks related to audio

	Number of audio tracks
	Dolby Digital mark It has been developed by Dolby Laboratories as a digital surround system.
	DTS (Digital Theater Systems) You can enjoy DTS audio if you connect an amplifier with a built-in DTS decoder to the DIGITAL OUT connector of the unit.

Placing A Disc

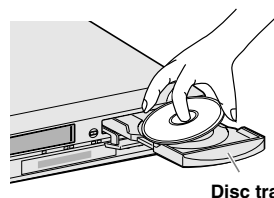
Opening the disc tray

Press to open the disc tray.



- Pressing the button again closes the disc tray.
- Use the button to open and close the disc tray.
- Do not block the disc tray with your hand while it is opening or closing as this may result in hardware failure.
- Do not place unplayable discs or any object other than a disc on the disc tray.
- Do not press down strongly on the disc tray or place any heavy objects on it.

Discs without cartridges



Disc tray

Place the disc on the disc tray with the label side facing up. Since disc size changes depending on the disc to be played back, be sure to correctly align the disc with the grooves for its size. If the disc is not in its groove, it may be scratched or otherwise damaged. To insert an 8 cm disc, place it according to the inner groove.

DVD-RAM discs contained in cartridges

Double-sided discs:

Remove the disc from the cartridge. Align the disc with the grooves on the disc tray as shown in the illustration and insert with the side you wish to play back or record facing down. If you insert the disc with "Side A" facing down, programs are recorded on the side A.

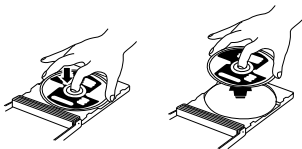
Single-sided discs:

Remove the disc from the cartridge. Align the disc with the grooves on the disc tray as shown in the illustration and insert with the label side facing up.

Care And Handling Of Discs

How to handle discs

When handling a disc, do not touch the surface of the disc. Since discs are made of plastic, they are easily damaged. If a disc gets dirty, dusty, scratched or warped, the images and sound will not be picked up correctly, and such a disc may cause the unit to malfunction.



Label side

Do not damage the label side, stick paper to or use any adhesives on its surface.

Recording side

Make sure that discs are not scratched and dirty on the recording side before use. Scratches and dirt on the recording side of a disc may hinder proper playback and recording. Also be careful that a DVD-RAM disc may get scratched or dirt when removed from cartridge then put back in after use.

Storage

Make sure that discs are kept in their cases. If discs are piled on top of one another without their protective cases, they can be damaged. Do not put discs in a location where they may be exposed to direct sunlight, or in a place where the humidity or temperature is high. Avoid leaving discs in your car!

Maintenance of discs

If there are fingerprints or other dirt adhering to a disc, wipe with a soft dry cloth, moving from the centre outwards.

If a disc is difficult to clean, wipe with a cloth moistened with water. Never use record cleaners, petrol, alcohol or any anti-static agents.

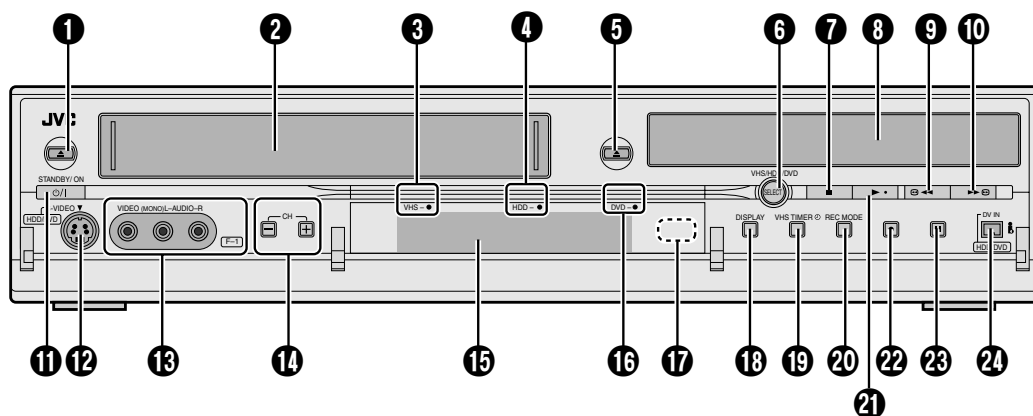


CAUTION:

Sometimes during playback, noise may appear or images may be garbled. This is sometimes due to the disc. (It may not be up to industry standards.)

These symptoms are caused by the discs, not by the malfunction of the unit.

Front View

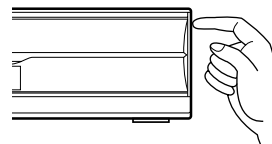


- ❶ Eject Button (▲) (VHS) ➤ pg. 50
- ❷ Cassette Loading Slot
- ❸ VHS Lamp (VHS) ➤ pg. 50
VHS Recording Lamp (●) ➤ pg. 53
- ❹ HDD Lamp (HDD) ➤ pg. 21, 44
HDD Recording Lamp (●) ➤ pg. 44
- ❺ Open/Close Button (▲) ➤ pg. 10
- ❻ VHS/HDD/DVD Select Button (**VHS/HDD/DVD SELECT**) ➤ pg. 27, 44, 50
 - This button will not function during navigation mode or set up mode.
- ❼ Stop Button (■) ➤ pg. 27, 46
- ❽ Disc Tray
- ❾ Reverse Search Button (◀◀) (HDD & DVD deck) ➤ pg. 28, 35
Rewind Button (◀◀) (VHS deck) ➤ pg. 50, 51
- ❿ Forward Search Button (▶▶) (HDD & DVD deck) ➤ pg. 28, 35
Fast Forward Button (▶▶) (VHS deck) ➤ pg. 50, 51
- ⓫ STANDBY/ON Button (⏻/⏻)

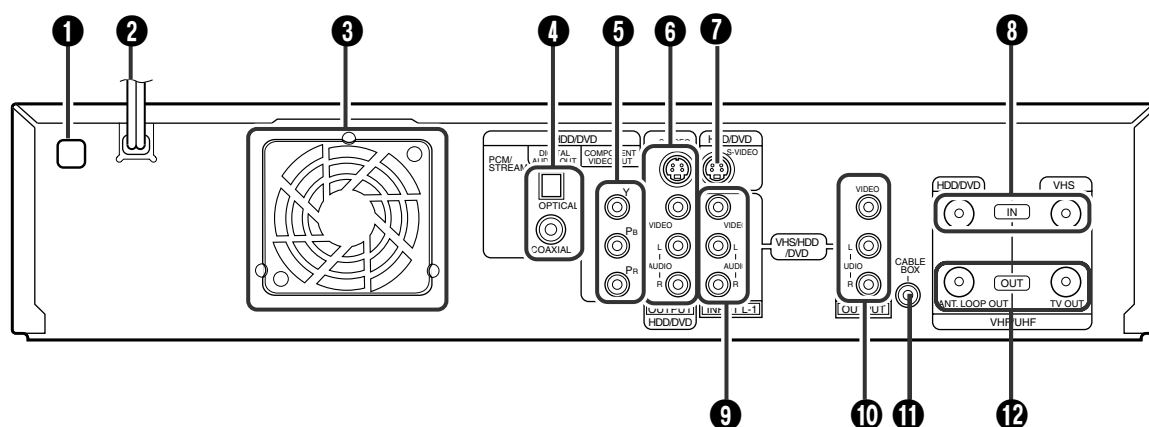
- ⓫ S-video Input Connector [S-VIDEO] (HDD & DVD deck) ➤ pg. 75
- ⓬ Video/Audio Input Connectors [**VIDEO/AUDIO ((MONO) L/R)**] ➤ pg. 75
- ⓭ Channel Buttons (**CH +/-**) ➤ pg. 41, 44, 52, 53
- ⓮ Front Display Panel ➤ pg. 14
- ⓯ DVD Lamp (DVD) ➤ pg. 21, 27
DVD Recording Lamp (●) ➤ pg. 41
- ⓰ Infrared Beam Receiving Window
- ⓱ Display Button (**DISPLAY**) ➤ pg. 30, 42
- ⓲ VHS Timer Button (**VHS TIMER** ⌚) ➤ pg. 60
- ⓳ Recording Mode Button (**REC MODE**) ➤ pg. 41, 44, 53
- ⓴ Play Button (▶) ➤ pg. 27, 46
- ⓵ Record Button (●) ➤ pg. 41, 44
- ⓶ Pause Button (⏸) ➤ pg. 27, 46
- ⓷ DV Input connector [DV IN (i*)] (HDD & DVD deck only) ➤ pg. 74

* i (i.Link) refers to the IEEE1394-1995 industry specification and extensions thereof. The i logo is used for products compliant with the i.Link standard.

To access covered connectors, pull and open the connector cover.



Rear View



❶ Region Number Label ➤ pg. 8

❷ AC Power Cord ➤ pg. 19

❸ Cooling Fan

- This prevents the temperature from rising inside the unit. Do not remove it.
- Install the unit so as not to block the area around the fan.
- The cooling fan on the rear of the unit may be activated even if the unit is turned off in the following cases;
 - In the Automatic Satellite Program Recording standby mode (➤ pg. 59)
 - when "AUTO CLOCK" is set to "ON" (➤ pg. 22)
 - (Set "AUTO CLOCK" to "OFF" if you mind the noise of the fan.)

❹ Digital Audio Output Connectors [DIGITAL AUDIO OUT (OPTICAL/COAXIAL)] (HDD & DVD deck only) ➤ pg. 77, 80

❺ Component Video Output Connectors [COMPONENT VIDEO OUT (Y/Pb/Pr)] ➤ pg. 19

- This component video output enables you to watch the images on the VHS deck in Progressive scan mode, refer to "VHS Progressive Scan" (➤ pg. 52).

❻ S-video/Video/Audio Output Connectors [S-VIDEO/VIDEO/AUDIO OUTPUT] (HDD & DVD deck only) ➤ pg. 19

❼ S-video Input Connectors [S-VIDEO INPUT] (HDD & DVD deck only) ➤ pg. 76

❽ Antenna Input Connectors [VHF/UHF IN] ➤ pg. 19

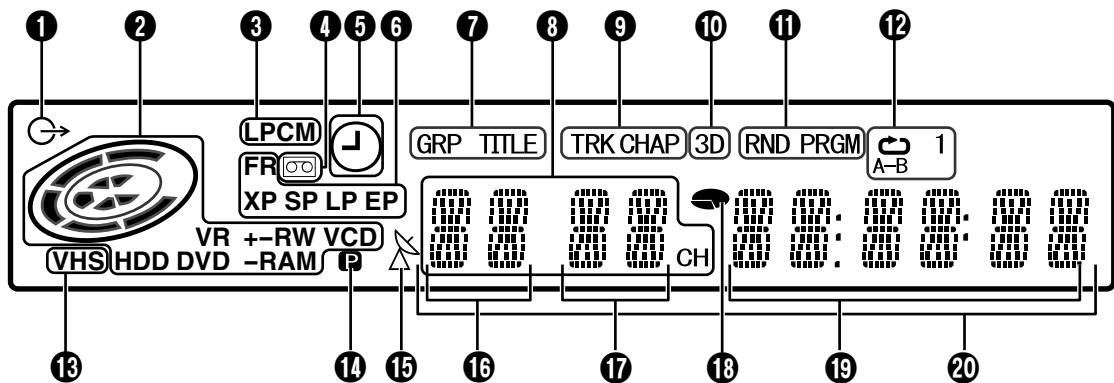
❾ Video/Audio Input Connectors [VIDEO/AUDIO INPUT L1] ➤ pg. 76

❿ Video/Audio Output Connectors [VIDEO/AUDIO OUTPUT] ➤ pg. 76

⓫ Cable Box Control Connector [CABLE BOX] ➤ pg. 24

⓬ Antenna Output Connectors [VHF/UHF OUT] ➤ pg. 19

Front Display Panel

**1 Video Indicator** (☉) ➤ pg. 42, 45, 53

Lights when VIDEO mode is selected by pressing **TV/VIDEO**. Lights off when TV mode is selected.

2 Disc Type Indicator

When a disc is loaded, the type of the disc is indicated.

Disc Status Indicator

When a disc is running, the disc marks rotate.

During High-Speed Search: Rotate faster than normal playback.
During Slow Motion: Rotate slower than normal playback.
While recording: Inner red ring lights in the same way as normal playback. During Instant Timer Recording (ITR), inner red ring slowly blinks.

While paused:

Disc marks blink when either recording or playing back.

While stopped:

Disc marks all light.

While resume stopped:

Disc marks all blink.

While the disc tray opened:

Disc marks all light out.

No disc on the disc tray:

Disc marks all light out.

VR Mode Indicator (VR) ➤ pg. 87

Lights when a DVD-RW disc is formatted in VR mode.

3 Linear PCM Indicator (LPCM)

Lights when "XP MODE REC AUDIO" is set to "LINEAR PCM" (➤ pg. 82) for recording with HDD, DVD-RAM, DVD-R and DVD-RW discs, and when Linear PCM audio is played.

4 Cassette Loaded Mark (☐)

Indicates the present of a cassette in the VHS deck.

Lights when a cassette is loaded into the VHS deck. Blinks when the end of the tape has been reached during timer recording, or when the unit is in timer recording standby mode with a cassette without record safety tab inserted.

5 VHS Timer Indicator (⌚)

Lights when the VHS deck is in the timer recording standby mode or when timer recording is in progress.

Blinks rapidly when **VHS TIMER** is pressed under the following conditions:

- Clock is not set.
- Timer programming has not been set.
- Cassette is not loaded.
- Timer recording standby mode with a cassette without safety tab inserted.
- Tape end is reached during time recording.

6 Recording Mode Indicator (XP/SP/LP/EP/FR) ➤ pg. 41

Blinks when recording mode is being set.

While "FR" is blinking, the left 3 digits of the Multi Display (16 17) indicate setting values ranging from "60" to "480". After the value has been set, only "FR" lights.

7 Group/Title Indicator (GRP/TITLE)

"GRP" or "TITLE" lights depending on a disc loaded while the left 2 digits of the Multi Display (16) indicate the numbers explained below.

"GRP": Total number of groups or group number being played back are displayed on the Multi Display.

"TITLE": Total number of titles or title number being played back are displayed on the Multi Display.

8 Channel/Recording Mode Indicator

Indicates the channel received. Or the recording mode (SP, EP) of the VHS deck.

9 Track/Chapter Indicator (TRK/CHAP)

"TRK" or "CHAP" lights depending on a disc loaded while the 3rd and 4th digits from the left of the Multi Display (16) indicate the numbers explained below.

"TRK": Total number of tracks or track number being played back are displayed on the Multi Display.

"CHAP": Chapter number being played back are displayed on the Multi Display.

10 Simulated Surround Effect Indicator (3D) ➤ pg. 38

Lights when a simulated surround effect is set to "3D-ON" on the on-screen bar.

11 Random/Program Playback Mode Indicator (RND/PRGM) ➤ pg. 39

"RND": Lights when Random Playback mode is set.

"PRGM": Lights when Program Playback mode is set.

12 Repeat Mode Indicator (☺/1/A-B) ➤ pg. 37

Select Repeat Playback mode on the on-screen bar.

"☺": Whole disc is played back repeatedly.

"☺1": A single title/chapter/track is played back repeatedly.

"☺A-B": The selected part (A-B) is played back repeatedly.

No display: Repeat Playback mode is off.

13 VHS Indicator ➤ pg. 42

Lights when VHS mode has been selected, during recording or when tapes recorded in VHS format are played back.

14 Video Output Indicator (P) ➤ pg. 83

No display: Indicates that interlace mode is engaged.

(P): Indicates that progressive mode is engaged.

(Example) (P) lights when video output mode is in progressive mode.

15 Automatic Satellite Program Recording Indicator ➤ pg. 59

Lights when the HDD deck is in the Auto Satellite Program Recording standby mode.

16 Group/Title Number Display**17 Track/Chapter Number Display****18 Remaining Time/Elapsed Time Indicator** ➤ pg. 30, 42

Lights when remaining time of HDD, DVD-RAM, DVD-R and DVD-RW discs is displayed, and lights out when elapsed time is displayed.

The right 6 digits of the Multi Display (16) indicate elapsed or remaining time of each track.

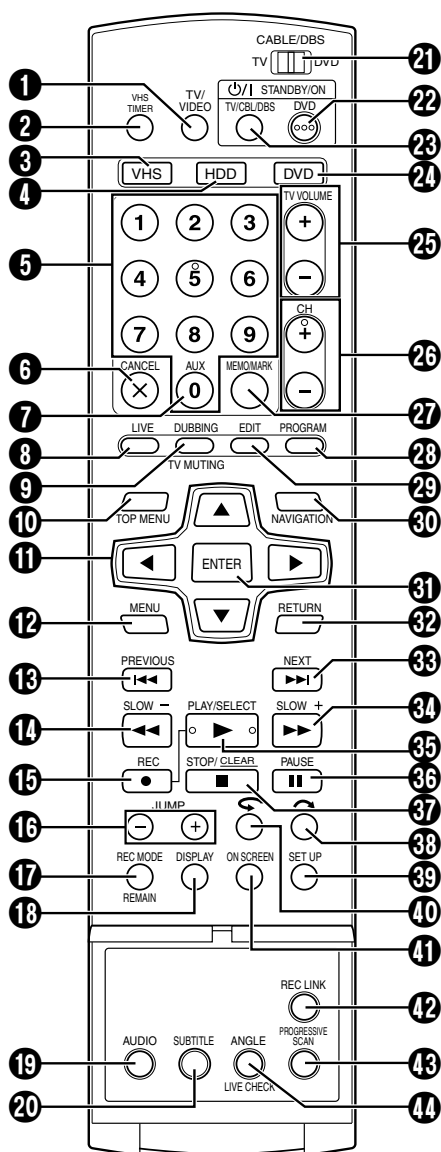
No display: Indicates elapsed time of the disc.

Displayed: Indicates remaining time of the disc.

19 Remaining Time/Elapsed Time Display ➤ pg. 30, 42**20 Multi Display**

Displays clock, received channel, elapsed time, and remaining time. Also displays status of the unit (NO DISC/OPEN/CLOSE/READING).

Remote Control



- 1 TV/VIDEO Button ☞ pg. 42, 45, 53
 2 VHS Timer Button (VHS TIMER) ☞ pg. 60
 3 VHS Button* ☞ pg. 50
** This button will not function during navigation mode or set up mode.*
 4 HDD Button* ☞ pg. 44
** This button will not function during navigation mode or set up mode.*
 5 Number Keys ☞ pg. 23, 41, 44
 6 Cancel Button (X (CANCEL)) ☞ pg. 39
 7 Auxiliary Button (AUX)
 8 Live Button (LIVE) ☞ pg. 35, 48
 9 Dubbing Button (DUBBING) ☞ pg. 70
 TV Muting Button (TV MUTING) ☞ pg. 78
 10 Top Menu Button (TOP MENU) ☞ pg. 28
 11 \triangleleft \triangleright Buttons ☞ pg. 21
 12 Menu Button (MENU) ☞ pg. 28
 13 Reverse Skip Button (\triangleleft) ☞ pg. 28, 48, 49
 Previous Button (PREVIOUS) ☞ pg. 31
 14 Reverse Search Button (\triangleleft) (HDD & DVD deck)
 ☞ pg. 28, 48
 Rewind Button (\triangleleft) (VHS deck) ☞ pg. 50
 Reverse Slow Button (SLOW -) ☞ pg. 29
 15 Record Button (●) ☞ pg. 41, 44

- 16 Jump Button (JUMP +/-) ☞ pg. 49
 17 Recording Mode Button (REC MODE) ☞ pg. 41, 44
 Remain Button (REMAIN) ☞ pg. 30, 42
 18 Display Button (DISPLAY) ☞ pg. 30, 42
 19 Audio Button (AUDIO) ☞ pg. 31
 20 Subtitle Button (SUBTITLE) ☞ pg. 30
 21 TV/CABLE/DBS/DVD switch ☞ pg. 21
 22 DVD STANDBY/ON Button (DVD ψ /I)
 23 TV/CBL/DBS STANDBY/ON Button (TV/CBL/DBS ψ /I)
 ☞ pg. 78
 24 DVD Button* ☞ pg. 27
** This button will not function during navigation mode or set up mode.*
 25 TV Volume Buttons (TV VOLUME +/-) ☞ pg. 78
 26 Channel Buttons (CH +/-) ☞ pg. 41, 78
 27 Memo Button (MEMO) ☞ pg. 64, 67
 Mark Button (MARK) ☞ pg. 29
 28 Programming Button (PROGRAM) ☞ pg. 55, 57, 58
 29 Edit Button (EDIT) ☞ pg. 64
 30 Navigation Button (NAVIGATION) ☞ pg. 63
 31 Enter Button (ENTER) ☞ pg. 21
 32 Return Button (RETURN) ☞ pg. 31, 37, 55
 33 Forward Skip Button (\triangleright) ☞ pg. 28, 48, 49
 Next Button (NEXT) ☞ pg. 31
 34 Forward Search Button (\triangleright) (HDD & DVD deck)
 ☞ pg. 28, 48
 Fast Forward Button (\triangleright) (VHS deck) ☞ pg. 50
 Forward Slow Button (SLOW +) ☞ pg. 29
 35 Play Button (\triangleright) ☞ pg. 27, 46
 Select Button (SELECT) ☞ pg. 69
 36 Pause Button (\parallel) ☞ pg. 27, 46
 37 Stop Button (\blacksquare) ☞ pg. 27, 46
 Clear Button (CLEAR) ☞ pg. 39
 38 Skip Search Button (\curvearrowright) ☞ pg. 29, 48
 39 Set Up Button (SET UP) ☞ pg. 21
 40 One Touch Replay Button (\curvearrowleft) ☞ pg. 48
 41 On-Screen Button (ON SCREEN) ☞ pg. 16, 36
 42 Automatic Satellite Program Recording Button (REC LINK) ☞ pg. 59
 43 Progressive Scan Button (PROGRESSIVE SCAN)
 ☞ pg. 83
 44 Angle Button (ANGLE) (DVD deck only) ☞ pg. 30
 Live Check Button (LIVE CHECK) ☞ pg. 35, 48

How To Use

Before use, insert two AA size batteries into the remote control with the polarity (\oplus and \ominus) matched correctly as indicated on the battery compartment or on the lid.

The remote control can operate most of your unit's functions, as well as basic functions of TV sets of JVC and other brands. (☞ pg. 78)

- Point the remote control toward the receiving window.
- The maximum operating distance of the remote control is about 8 m.

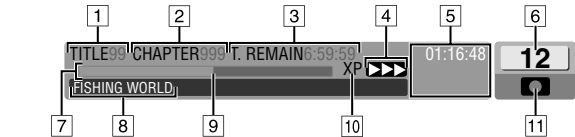
NOTE:

If the remote control doesn't work properly, remove its batteries, wait a short time, replace the batteries and then try again.

On-Screen Display (DVD deck)

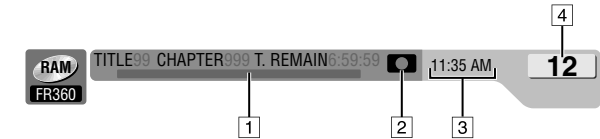
When “SUPERIMPOSE” is set to “AUTO” and **ON SCREEN** on the remote control is pressed, various operational indicators appear on the TV screen. To clear the operational indicators, press **ON SCREEN** twice.

When playing back a recorded title



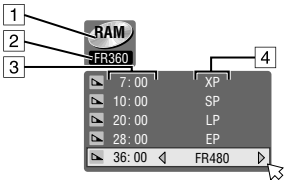
- 1 Playback title number
- 2 Playback chapter number
- 3 Disc remaining time
- 4 Current status (playback)
- 5 Audio mode
- 6 Current received (recording) channel position number (On playback background)
- 7 Bar meter
- 8 Name of title (or play list) currently being played back
- 9 Current playback point
- 10 Recorded mode
- 11 Live Memory mode (recording)

When recording



- 1 Recording point
- 2 Current status (recording)
- 3 Current time
- 4 Recording channel number

When pressing REC MODE (Appears for eight seconds.)



- 1 Disc type
- 2 Current recording speed
- 3 Remaining disc time for each recording speed
- 4 Recording speed

When pressing ● during recording

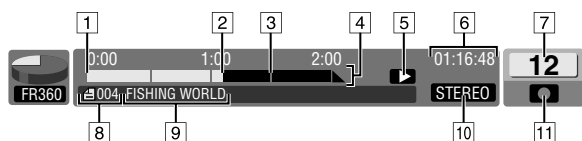


- 1 Recording time for Instant Timer Recording (ITR) mode

On-Screen Display (HDD deck)

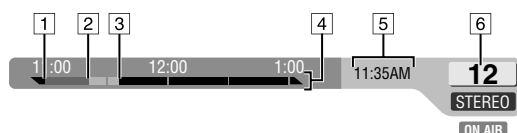
When "SUPERIMPOSE" is set to "AUTO" and **ON SCREEN** on the remote control is pressed, various operational indicators appear on the TV screen. To clear the operational indicators, press **ON SCREEN** twice.

When playing back a recorded title



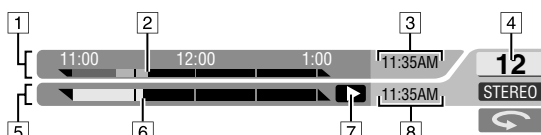
- 1 Title start
- 2 Current playback point
- 3 Title end
- 4 Time scale (This title is an hour and a half long.)
- 5 Play mode
- 6 Elapsed playing time
- 7 Current received (recording) channel position number (On playback background)
- 8 Recorded title (or play list) number currently being played back
- 9 Name of title currently being played back
- 10 Audio mode
- 11 Live Memory mode (recording)

When watching a program on air



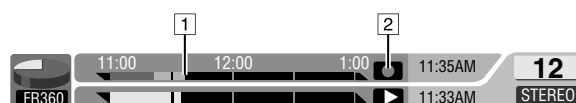
- 1 Possible start point from where Live Memory Playback can be performed
- 2 Possible start point from where Live Memory Recording can be performed (Received channel has changed at this point.)
- 3 Currently viewed point
- 4 Time scale
- 5 Current time
- 6 Current received channel position number

When using Live Memory playback



- 1 Time scale for Temporary Recording
- 2 Current Temporary Recording point
- 3 Current time
- 4 Current playback channel position number
- 5 Time scale for Live Memory Playback
- 6 Current playback point
- 7 Live Memory playback mode
- 8 Current playback time

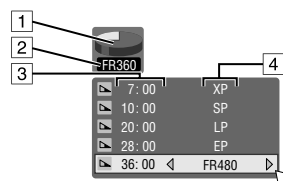
When recording



- 1 Live Memory Recording point
- 2 Live Memory Recording mode

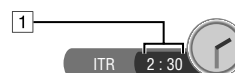
When pressing REC MODE

(Appears for eight seconds.)



- 1 HDD capacity graph
- 2 Current recording speed
- 3 Remaining HDD time for each recording speed
- 4 Recording speed

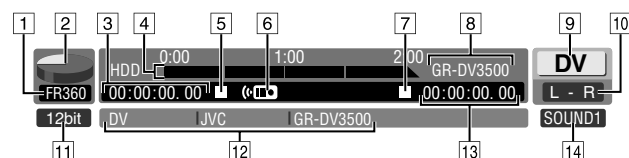
When pressing ● during recording



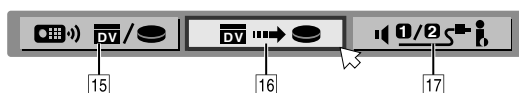
- 1 Recording time for Instant Timer Recording (ITR) mode

On-Screen Display (DV Dubbing)

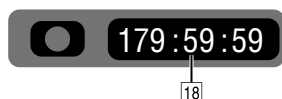
When capturing images from the external DV equipment



- 1 Recording speed
- 2 HDD capacity graph
- 3 HDD time counter
- 4 Recording time scale
- 5 HDD mode
- 6 Remote control mode
- 7 Connected DV equipment mode
- 8 Connected DV equipment model information
- 9 Input channel
- 10 Sound mode
- 11 Sound input bit-rate*
- * Indicates the sound bit-rate of the connected DV equipment
- 12 Connected DV equipment information*
- * Maker name and model name, etc. may not appear depending on the connected equipment.
- 13 Time counter for the connected DV equipment
- 14 Sound monitor mode



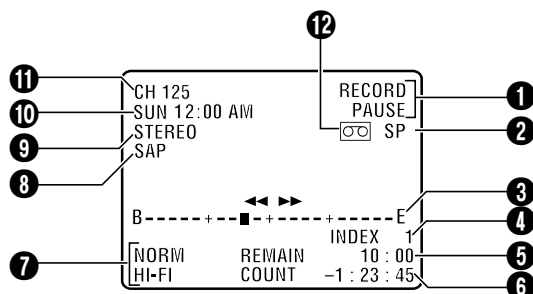
- 15 Remote control switch
- 16 Auto capture button
- 17 Sound monitor switch



- 18 Elapsed recording time

On-Screen Display (VHS deck)

When "SUPERIMPOSE" is set to "AUTO" and **ON SCREEN** on the remote control is pressed, various operational indicators appear on the TV screen. To clear the operational indicators, press **ON SCREEN** again.

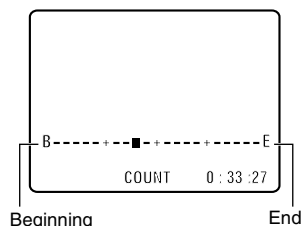


- 1 Operation Mode Indicators
- 2 Recording Mode (SP/EP)
- 3 Tape Position Indicator

The tape position indicator appears on the TV screen when you press ◀ or ▶ from the Stop mode or perform an Index Search. (▶ pg. 51) The position of "■" in relation to "0" (Beginning) or "+" (End) shows you where you are on the tape.

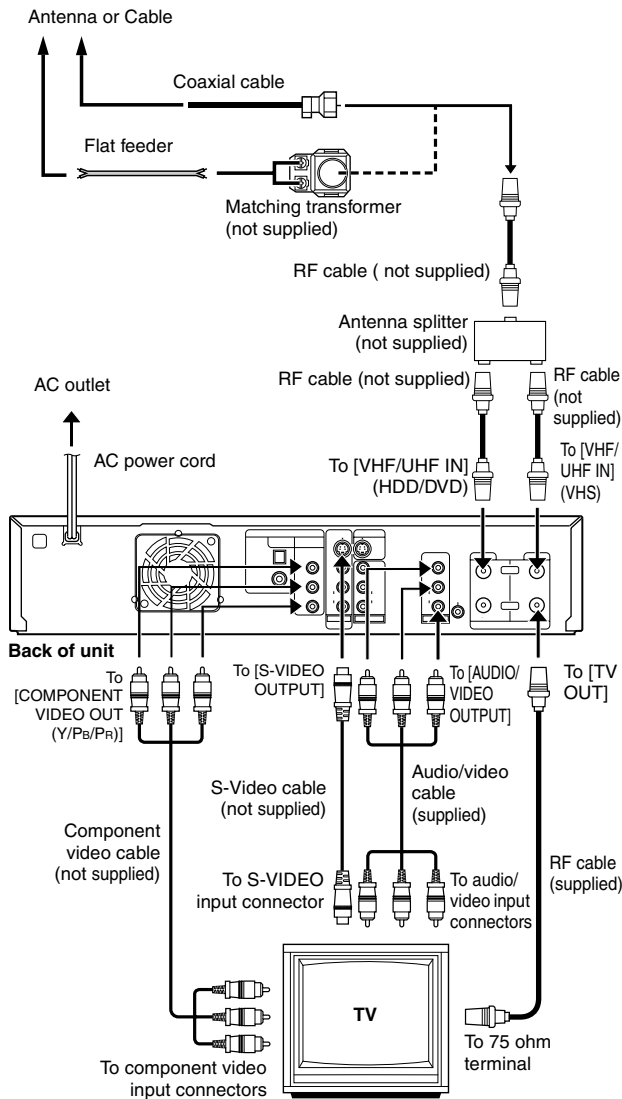
NOTE:

Depending on the type of tape being used, the tape position indicator may not appear correctly.



- 4 Index number ▶ pg. 51
- 5 Tape Remaining Time Indicator ▶ pg. 54
- 6 Counter Display
- 7 Audio Mode Display ▶ pg. 52
- 8 SAP Indicator ▶ pg. 54
- 9 Stereo Program Indicator ▶ pg. 54
- 10 Day/Clock Display
- 11 Channel Position Number/Auxiliary Input Indicator (L-1 or F-1)
- 12 "Cassette Loaded" Mark

Basic Connections



It's essential that your unit be properly connected.

THESE STEPS MUST BE COMPLETED BEFORE ANY VIDEO OPERATION CAN BE PERFORMED.

- 1** Make sure the package contains all of the accessories listed in "SPECIFICATIONS" on page 93.
- 2** Place the unit on a stable, horizontal surface.
- 3** Connect the unit to a TV depending on the TV and cables you use.

■ RF Connection

To connect to a TV with NO AV input connectors —

- 1** Disconnect the TV antenna from the TV.
- 2** Connect the TV antenna cable to the [VHF/UHF IN] connectors on the rear panel of the unit via antenna splitter.
- 3** Connect the supplied RF cable between the [TV OUT] connector on the rear panel of the unit and the TV's antenna terminal.

NOTES:

- If you do not use antenna splitter, connect the TV antenna cable to [VHF/UHF IN] (HDD/DVD) connector. However, it is not possible to record the TV program on the VCR deck.

- Connect the unit's [ANT. LOOP OUT] connector to the antenna input connector on another video unit.

■ AV Connection

To connect to a TV with AV input connectors —

- 1** Perform **1** – **2** in "RF Connection".
- 2** Connect the supplied audio/video cable between the [AUDIO/VIDEO OUTPUT] connectors on the rear panel of the unit and the TV's audio/video input connectors.

■ S-Video Connection (HDD & DVD deck only)

To connect to TV's S-VIDEO input and AUDIO input connectors —

- 1** Perform **1** – **2** in "RF Connection".
 - 2** Connect the unit's [S-VIDEO OUTPUT] connector to the TV's S-VIDEO input connector.
 - 3** Connect the unit's [AUDIO OUTPUT] connectors to the TV's AUDIO input connectors.
- You can obtain high-quality S-VHS pictures.
 - If your TV is not stereo-capable, use the unit's [AUDIO OUTPUT] connectors to connect to an audio amplifier for Hi-Fi stereo sound reproduction.

■ Component Video Connection

To connect to TV's component video input connectors —

- 1** Perform **1** – **2** in "RF Connection".
 - 2** Connect the unit's [COMPONENT VIDEO OUT (Y/Pb/Pr)] connectors to the TV's component video input connectors.
 - 3** Connect the unit's [AUDIO OUTPUT] connectors to the TV's AUDIO input connectors.
- You can obtain high-quality component video pictures.
 - If your TV is not stereo-capable, use the unit's [AUDIO OUTPUT] connectors to connect to an audio amplifier for Hi-Fi stereo sound reproduction.
 - By using the component video connection, you can view the images in the progressive mode. For switching to the progressive mode, refer to "Scan Mode Set" (pg. 83).
 - You can also watch the images on the VHS deck in Progressive scan mode via the component video output, refer to "VHS Progressive Scan" (pg. 52).

- 4** Plug the end of the AC power cord into an AC outlet. This unit performs Plug & Play Set automatically. (pg. 20)
- The clock and tuner channels will automatically be set when the antenna is connected and when the AC power cord is first connected to an AC outlet. (If "AUTO" and the channel indicator are displayed on the front display panel before the unit is powered on, the clock and tuner channels are being set automatically. Wait for the time to be displayed on the front display panel before turning on the unit.)
- "LOADING" blinks on the front display panel when the AC plug of the AC power cord is connected into an AC outlet and it takes approximately 50 seconds for the unit to be turned on. This is not a malfunction.

- 5** Set the video channel. The video channel is the channel on which you can watch the picture from the unit on the TV when only using RF connection.

With RF Connection

Set the video channel to "3 CH" or "4 CH". To set the video channel, perform steps **1** – **3** below:

- The video channel is preset to "3 CH". Set to "4 CH" if the Channel 3 is used for broadcasting in your area.

With AV Connection

Set the video channel to "– CH" (off). To set the video channel, perform steps **1** – **3** below:

With S-Video/Component Video Connection (HDD & DVD deck only)

Set the video channel to "– CH" (off). To set the video channel, perform steps **1** – **3** below:

How To Set The Video Channel

- 1** Make sure that there is no cassette in the unit.
- 2** Press **⏻** to turn off the unit, then press **■** on the unit for more than 5 seconds. "3 CH" appears on the front display panel.
- 3** Press **CH +/-** on the remote control to select "3 CH", "4 CH" or "– CH" (off), then press **ENTER**.

Plug & Play Set

Auto Clock Set/Auto Tuner Set

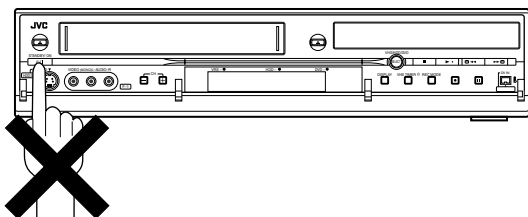
This unit sets the clock and tuner channels automatically when AC power cord is first connected to an AC outlet. The antenna cable must be connected for the Plug & Play setting.

The time and date can be set automatically by the clock setting data transmitted from one of the regular TV broadcast channels.

We call this TV channel the "host channel" and it is a PBS channel in your area.

ATTENTION:

- If you use a cable box, Plug&Play will not function; set the clock and tuner channels separately. (➡ pg. 22 – 23)
- Depending on areas or reception conditions, the unit may not receive the Auto clock setting data from the PBS channel. If this function is taking a considerable amount of time, it may be necessary to perform the Semiauto or Manual Clock Set procedure.



INFORMATION

- If "AUTO CLOCK" is set to "ON" (➡ pg. 22), the clock will be adjusted automatically by the host channel every hour (except 11:00 PM, midnight, 1:00 AM and 2:00 AM) using the incoming PBS channel clock setting data. (This automatic clock adjustment can only be performed when the unit is turned off. The clock will be adjusted just on these hours — on the time displayed on the front display panel, not on the actual real time.) The default setting of "AUTO CLOCK" is "ON". (➡ pg. 22)
- If the memory backup fails, because a power outage occurs or because the AC power cord is unplugged, Plug & Play will be performed when power is restored to the unit.

What to do if Plug & Play setting failed

- If an incorrect time is displayed on the front display panel, you may be receiving the clock setting data of a PBS channel from an adjacent time zone, or an incorrect PBS channel from a cable TV system. In this case, perform "Semiauto Clock Set" (➡ pg. 22) or "Manual Clock Set" (➡ pg. 22).
- If "—:—:—" appears on the front display panel, your antenna cable may not be connected to the unit or there may not be a Host PBS signal available in your area. Ensure that the antenna cable is connected correctly. Then turn on and off the unit; the Plug & Play setting will be automatically reactivated. If Plug & Play setting is not performed though the antenna cable is connected correctly, perform "Manual Clock Set" (➡ pg. 22) and "Auto Channel Set" (➡ pg. 23) or "Manual Channel Set" (➡ pg. 23).

1 Connect the antenna cable to the unit. (➡ pg. 19) Then connect the AC power cord to an AC outlet. Do not turn on the unit.

The clock and tuner channels will be set automatically.

- "LOADING" blinks on the front display panel when the AC plug of the AC power cord is connected into an AC outlet and it takes approximately 50 seconds for the unit to be turned on. This is not a malfunction.

NOTES:

- Auto Clock Set is performed first. "AUTO" blinks on the front display panel during Auto Clock Set.
- Auto Channel Set is performed next. Auto Channel Set scans all the channels that are receivable by your unit. During Auto Channel Set, the channel numbers are displayed as they are scanned and set.
- When Plug & Play setting has been completed successfully, the correct clock time is displayed. If you perform Plug & Play setting successfully, there is no need to perform "Clock Set" (➡ pg. 22) and "Tuner Set" (➡ pg. 23). If, however, you want to add or delete channels, refer to "Manual Channel Set" (➡ pg. 23).

During Auto Clock Set

"AUTO" blinks.



During Auto Channel Set

The channel numbers are displayed and "AUTO" blinks as they are scanned and set.



Plug&Play Completed

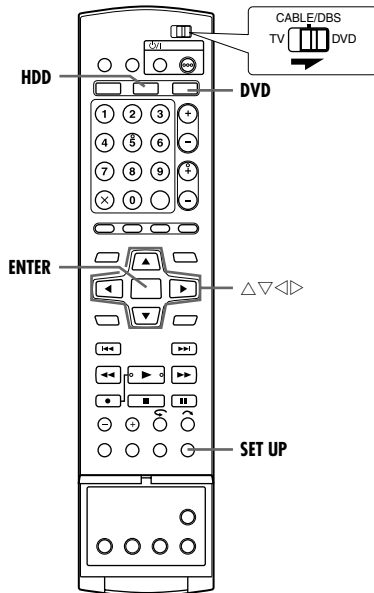
The current time is displayed.

- If an incorrect clock time or "—:—:—" appears on the front display panel, see "What to do if Plug & Play setting failed" (➡ pg. 20).



Language

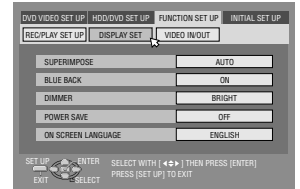
- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.



On-screen Language Set

This unit offers you the choice to view on-screen messages in 3 different languages.

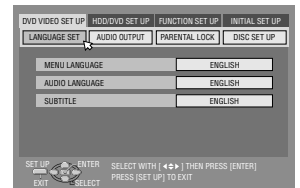
- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
- 3 Press $\triangle \nabla$ to select "FUNCTION SET UP", then press ∇ .
- 4 Press $\triangle \nabla$ to select "DISPLAY SET", then press ∇ .
- 5 Press $\triangle \nabla$ to select "ON SCREEN LANGUAGE", then press **ENTER**.
- 6 Press $\triangle \nabla$ to select your desired language, then press **ENTER**.
- 7 Press **SET UP** to complete the setting.



Menu/Audio/Subtitle Language Set (DVD deck only)

Some DVD discs contain the DVD menu display, audio and subtitles in multiple languages. With these discs, you can set the default language as you like.

- The procedure shows how to set "MENU LANGUAGE" as an example.
- 1 Press **DVD** so that the DVD lamp lights up on the unit.
 - 2 Press **SET UP** to access the Main Menu screen.
 - 3 Press $\triangle \nabla$ to select "DVD VIDEO SET UP", then press ∇ .
 - 4 Press $\triangle \nabla$ to select "LANGUAGE SET", then press **ENTER**.
 - 5 Press $\triangle \nabla$ to select "MENU LANGUAGE", then press **ENTER**.
 - 6 Press $\triangle \nabla$ to select your desired language, then press **ENTER**.
 - See "Language Code List" (pg. 94).
 - 7 Press **SET UP** to complete the setting.



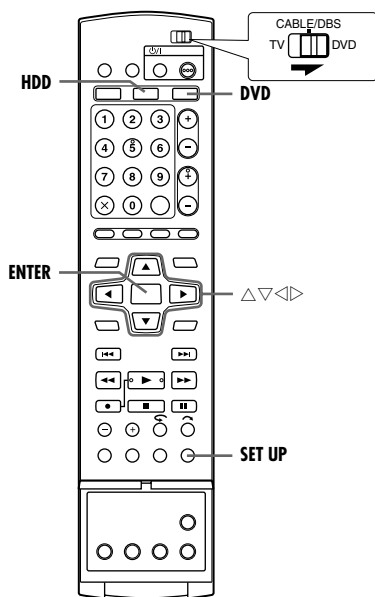
NOTE:

When the selected language is not available on the disc, the disc's default menu language is played back.

Clock Set

Perform clock setting only if the clock has not been set correctly by the Plug&Play setting.

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.



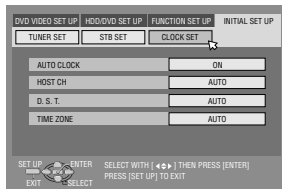
Semiauto Clock Set

You can change the host channel/D.S.T. (Daylight Saving Time)/time zone setting manually.

NOTE:

The time set previously will be erased when "AUTO CLOCK", "HOST CH", "D.S.T." or "TIME ZONE" setting is changed.

- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
- 3 Press **◀▶** to select "INITIAL SET UP", then press **▽**.
- 4 Press **◀▶** to select "CLOCK SET", then press **▽**.
- 5 Press **△▽** to select "AUTO CLOCK [CATV]", then press **ENTER**. Press **△▽** to select "ON", then press **ENTER**.
- 6 Press **△▽** to select "HOST CH", then press **ENTER**. Press **△▽** to select "AUTO" or the desired PBS channel number, then press **ENTER**.



NOTE:

Some PBS channels do not transmit clock setting data.

- 7 Press **△▽** to select "D.S.T.", then press **ENTER**. Press **△▽** to select the desired setting, then press **ENTER**.

AUTO: Select if you want to adjust your unit's clock automatically by the incoming signal from the host channel. Be sure to select the correct time zone manually in step 8.

ON: Adjustment will be made by the built-in clock itself.

OFF: Select when Daylight Saving Time does not apply to you.

- 8 Press **△▽** to select "TIME ZONE", then press **ENTER**. Press **△▽** to select "AUTO" or the desired time zone, then press **ENTER**.

- Each time you press **△▽**, the time zone changes as follows:
 ↔AUTO↔ATLANTIC↔EASTERN↔CENTRAL↔
 MOUNTAIN↔PACIFIC↔ALASKA↔HAWAII↔
 (back to the beginning)

NOTE:

If an incorrect time is displayed by the Plug & Play function, you may be receiving the clock setting data of a PBS channel from an adjacent time zone or from an incorrect PBS channel from a cable TV system. If you selected "AUTO" for the host channel in step 6, be sure to select the correct time zone manually.

- 9 Press **SET UP** to complete the setting.

IMPORTANT:

Turn off the unit after performing Semiauto Clock. "AUTO" will appear on the front display panel while the clock is being set. The current clock time will appear automatically when the clock setting is complete.

Auto Daylight Saving Time

This function enables automatic adjustment of the unit's clock at the start and end of Daylight Saving Time.

With Auto DST activated, —

— on the first Sunday of April at 2:00 AM, the clock is adjusted to 3:00 AM.

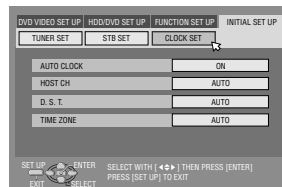
— on the last Sunday of October at 2:00 AM, the clock is adjusted to 1:00 AM.

NOTE:

Timer recording may not function correctly at the time Daylight Saving Time is adjusted.

Manual Clock Set

- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
- 3 Press **◀▶** to select "INITIAL SET UP", then press **▽**.
- 4 Press **◀▶** to select "CLOCK SET", then press **▽**.



- 5 Press **△▽** to select "AUTO CLOCK", then press **ENTER**. Press **△▽** to select "OFF", then press **ENTER**.

- 6 Press **△▽** to select "TIME", then press **ENTER**. Press **△▽** until the desired time appears, then press **ENTER** to start clock.

- Set the date and year in the same way.

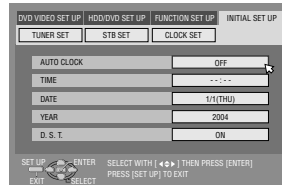
- Holding **△▽** changes the time in 30-minutes interval, or changes the date in 15-days interval.

- 7 Press **△▽** to select "D.S.T.", then press **ENTER**. Press **△▽** to select the desired setting, then press **ENTER**.

ON: Adjustment will be made by the built-in clock itself.

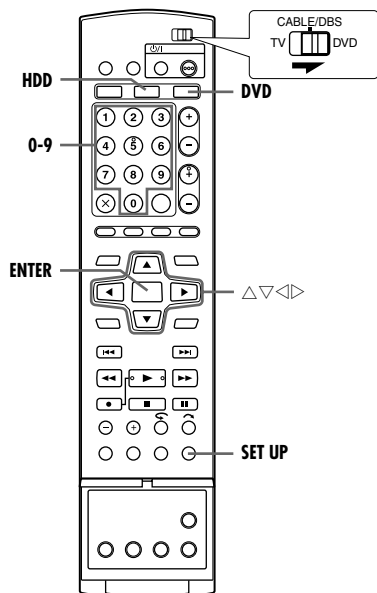
OFF: Select when Daylight Saving Time does not apply to you.

- 8 Press **SET UP** to complete the setting.



Tuner Set

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.



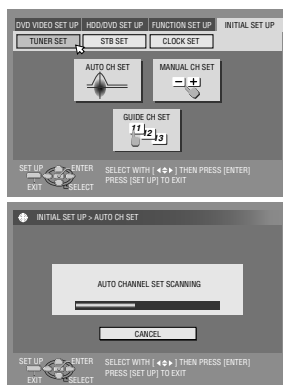
INFORMATION

The unit selects the correct band (TV or CATV) automatically during Auto Channel Set. The selected band will be displayed on the right side of "BAND" on the Tuner Set screen.

Auto Channel Set

Perform Auto Channel Set only if channels have not been set correctly by the Plug&Play setting.

- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
- 3 Press $\triangle \nabla$ to select "INITIAL SET UP", then press ∇ .
- 4 Press $\triangle \nabla$ to select "TUNER SET", then press ∇ .



- 5 Press $\triangle \nabla \triangle \nabla$ to select "AUTO CH SET", then press **ENTER**. You can automatically set the receivable channels in your area in the order of their frequencies.
- When Auto Channel Set is complete, "SCAN COMPLETED" appears on the TV screen.
- If the scan was unsuccessful, "SCAN COMPLETED-NO SIGNAL-" appears on screen. Check the connections and start again.
- 6 Press **SET UP** to complete the setting.

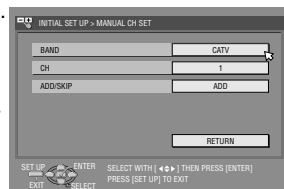
Manual Channel Set

You can add the channels you want or delete the channels you do not want manually.

- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
- 3 Press $\triangle \nabla$ to select "INITIAL SET UP", then press **ENTER**.
- 4 Press $\triangle \nabla$ to select "TUNER SET", then press ∇ .
- 5 Press $\triangle \nabla \triangle \nabla$ to select "MANUAL CH SET", then press **ENTER**.
- 6 Add or skip the desired channels.

To add channels

- 1 Press $\triangle \nabla$ to select "CH", then press **ENTER**.
- 2 Press the **number keys** to enter a channel number you want to add, then press **ENTER**.
- 3 Press $\triangle \nabla$ to select "ADD/SKIP", then press **ENTER**.
- 4 Press $\triangle \nabla$ to select "ADD", then press **ENTER**.
- 5 Repeat 2 - 4 to add other channels.



To skip channels

- 1 Press $\triangle \nabla$ to select "CH", then press **ENTER**.
- 2 Press $\triangle \nabla$ to select a channel number you want to skip, then press **ENTER**.
- 3 Press $\triangle \nabla$ to select "ADD/SKIP", then press **ENTER**.
- 4 Press $\triangle \nabla$ to select "SKIP", then press **ENTER**.
- 5 Repeat 2 - 4 to skip other channels.
- 7 Press **SET UP** to complete the setting.

Cable Box and/or DBS Receiver Control Setting (HDD & DVD Deck only)

The following procedure is required if you receive your TV channels through a cable box (descrambler) and/or if you receive satellite channels through DBS (Direct Broadcast Satellite) receiver. The Controller allows the unit to automatically switch the cable box and/or DBS receiver's channels during timer recording.

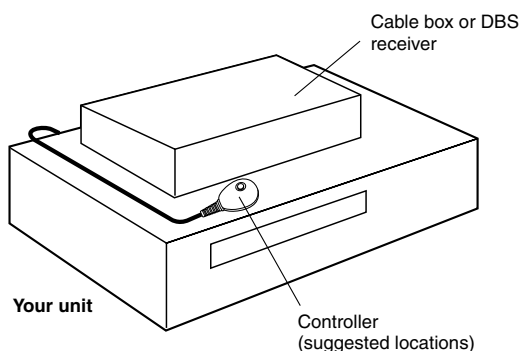
NOTES:

- The Controller is effective for "VCR Plus+ C® Timer Programming" (pg. 55), or "Manual Timer Programming" (pg. 57).
- When connecting your cable box, refer to its instruction manual.

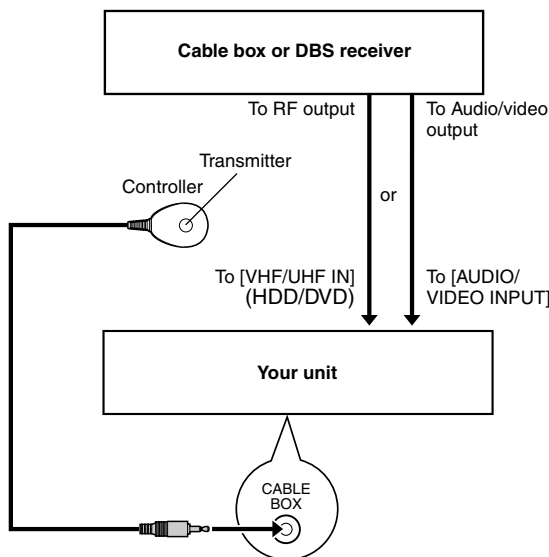
Installing Controller

1 If both a cable box and a DBS receiver are used, position the Controller so its signal reaches the receiving windows of both the cable box and DBS receiver.

2 Fix securely using the adhesive strip attached on the back of the Controller.



3 Connect the controller to the unit.



If your cable box or DBS receiver does not have audio/video output connectors

Connect the RF output connector on the cable box or DBS receiver to the [VHF/UHF IN] (HDD/DVD) connector on the rear of your unit.

If your cable box or DBS receiver has audio/video output connectors

Connect the audio/video output connectors on the cable box or DBS receiver to the [AUDIO/VIDEO INPUT] connectors on the rear of the unit.

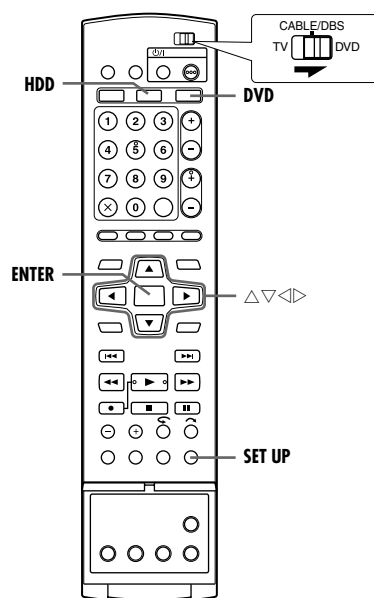
- If both a cable box and a DBS receiver are used, it is recommended that you connect the DBS receiver to your unit's [AUDIO/VIDEO INPUT] connectors and the cable box to your unit's [VHF/UHF IN] (HDD/DVD) connector.

4 Connect the Controller to the [CABLE BOX] connector on the rear panel.

Setting Brand And Channel

After installation, set the cable box and/or DBS receiver's brand and channels correctly; otherwise, the Controller cannot work correctly.

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.



1 Turn on the cable box and/or DBS receiver.

2 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.

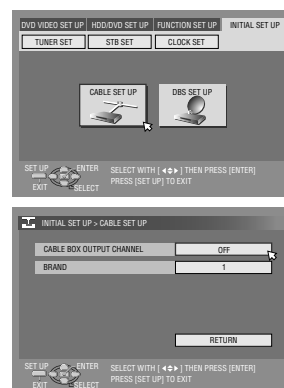
3 Press **SET UP** to access the Main Menu screen.

4 Press **◀▶** to select "INITIAL SET UP", then press **▽**.

5 Press **◀▶** to select "STB SET", then press **▽**.

6 Press **△▽** to select "CABLE SET UP" or "DBS SET UP", then press **ENTER**.

7 Press **△▽** to select "CABLE BOX OUTPUT CHANNEL" or "DBS RECEIVER OUTPUT CHANNEL", then press **ENTER**.



8 Select the output channel.

Your selection depends on how the cable box and/or DBS receiver is connected to your unit.

- If the cable box or DBS receiver is connected to your unit's [VHF/UHF IN] (HDD/DVD) connector on the rear panel, press $\Delta\nabla$ to select the channel number representing the cable box's output (CH2 – CH9), then press **ENTER**.
- If the cable box or DBS receiver is connected to your unit's [VIDEO/AUDIO ((MONO) L/R)] input connectors on the front panel, press $\Delta\nabla$ to select "F-1", then press **ENTER**.
- If the cable box or DBS receiver is connected to your unit's [AUDIO/VIDEO INPUT] connectors on the rear panel, press $\Delta\nabla$ to select "L-1", then press **ENTER**.
- If you do not use a cable box or DBS receiver, press $\Delta\nabla$ to select "OFF", then press **ENTER**.

9 Press $\Delta\nabla$ to select "BRAND", then press **ENTER**. Press $\Delta\nabla$ to select the brand code from the following list, then press **ENTER**.

10 Press $\Delta\nabla$ to select "RETURN", then press **ENTER**.

CABLE BOX BRAND	CODE
ARCHER	1, 5, 17
CABLETENNA	1, 17
CABLEVIEW	15, 16, 17, 21, 25
CITIZEN	15, 16, 17, 21, 25
CURTIS	2, 8
DIAMOND	1, 17
GC BRAND	15, 16, 17, 21, 25
GEMINI	15
GENERAL INSTRUMENTS	1, 4, 6, 11, 12, 15, 28
HAMLIN	10, 18, 23
JASCO	15
JERROLD	1, 4, 6, 11, 12, 15, 28
NOVAVISION	2, 8
OAK	7, 20
PANASONIC	13, 14
PULSER	15, 16, 17, 21, 25
RCA	13, 14
REGAL	10, 18, 23
REMBRANDT	1, 16, 17
SAMSUNG	5, 16, 24
SCIENTIFIC ATLANTA	2, 8
SIGMA	7, 20
SL MARX	5, 16, 17, 24, 25
SPRUCER	13, 14
STARGATE	5, 15, 16, 17, 21, 24, 25
TELEVIEW	5, 16, 24
TOCOM	1, 4, 16
UNIKA	1, 17
UNIVERSAL	16, 17, 25
VIDEOWAY	3, 9, 22
ZENITH	3, 9, 22

DBS RECEIVER BRAND	CODE
JVC (DISH Network)	51
ECHOSTAR (DISH Network)	51
SONY (DSS)	41
RCA (DSS)	40

■ **For cable box**

If the cable box's channel changes to 9, setting is complete.

Press **ENTER** and "CABLE BOX CONTROL IS ON" appears on the screen for about 5 seconds, then the screen in step 6 appears.

If the cable box's channel does not change to 9;

- 1 Press $\triangleleft \triangleright$ to select "NO", then press **ENTER**.
- 2 Repeat steps 9 – 10 until the cable box's channel changes to 9 by entering another code.
- 3 If the channel does not change after going through all the code numbers listed for your model of cable box, then try all the other numbers.

■ **For DBS receiver**

If the DBS receiver's channel changes to the channel listed below for your brand, setting is complete.

Press **ENTER** and "DBS RECEIVER CONTROL IS ON" appears on the screen for about 5 seconds, then press **ENTER**. The screen in step 6 appears.

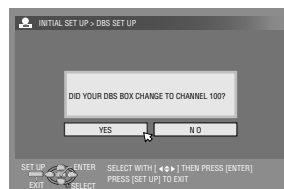
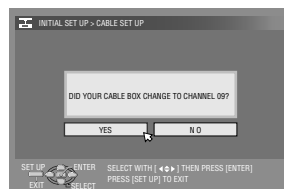
JVC	→	100	SONY	→	205
ECHOSTAR	→	100	RCA	→	205

If the DBS receiver's channel does not change as shown above;

- 1 Press $\triangleleft \triangleright$ to select "NO", then press **ENTER**.
- 2 Repeat steps 9 – 10.

NOTES:

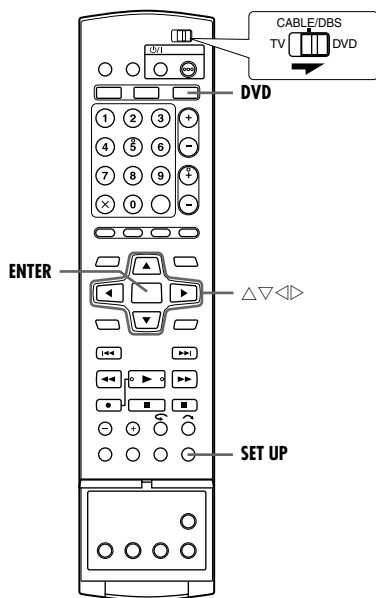
- The Controller may not work with all types of cable box or DBS receiver.
- If your cable box does not respond to any code between 1 and 28, you cannot use the Controller to change cable box channels. In this case, make sure to leave the cable box turned on and tuned to the proper channel before the scheduled start time of timer recording. Contact your cable company about the possibility of exchanging your current cable box with the one compatible with your unit.
- If your DBS receiver does not respond to the code, you cannot use the Controller to change satellite channels. In this case, make sure to leave the DBS receiver turned on and tuned to the proper channel before the scheduled start time of timer recording.
- The unit can only change the cable box or satellite channel through the Controller during timer recording.
- If your cable box and/or DBS receiver cannot be operated with a remote control (because it has no receiving window), you cannot use the Controller to change its channels. Make sure to leave the cable box and/or DBS receiver turned on and tuned to the proper channel before the scheduled start time of timer recording.
- If the unit's memory backup expires because of a power failure, set the cable box and/or DBS receiver output channels and brands again.
- **For customers in U.S.A.:** If you are unable to set the Controller, contact JVC toll free at 1-800-252-5722.



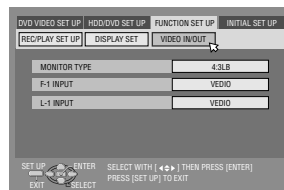
Monitor Set

You can select the monitor type depending on the TV used when you play back DVD VIDEO discs recorded for wide-screen TVs.

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.



- 1 Press **DVD** so that the DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
 - You cannot set the monitor type during recording or playback.
- 3 Press $\triangleleft \triangleright$ to select "FUNCTION SET UP", then press ∇ .
- 4 Press $\triangleleft \triangleright$ to select "VIDEO IN/OUT", then press ∇ .
- 5 Press $\triangle \nabla$ to select "MONITOR TYPE", then press **ENTER**.
- 6 Press $\triangle \nabla$ to select the desired option, then press **ENTER**.
- 7 Press **SET UP** to complete the setting.



* The **boldface** settings below indicate the settings at your purchase.

■ MONITOR TYPE — **4:3LB** / 4:3PS / 16:9 AUTO / 16:9 FIX

4:3LB (Letter Box conversion): Select this when the aspect ratio of your TV is 4:3 (conventional TV). While viewing a wide screen picture, the black bars appear on the top and the bottom of the screen.

4:3PS (Pan&Scan): Select this when the aspect ratio of your TV is 4:3 (conventional TV). While viewing a wide screen picture, the black bars do not appear; however, the left and right edges of the pictures will not be shown on the screen.

16:9 AUTO (Wide television conversion): Select this when the aspect ratio of your TV is 16:9 (wide TV).

16:9 FIX (Wide television conversion): Select this when the aspect ratio of your TV is fixed to 16:9 (wide TV). The unit automatically adjusts the screen width of the output signal correctly when playing back a picture whose aspect ratio is 4:3.

Pan&Scan/Letter Box

In general, DVD VIDEO disc are produced for a wide-screen TV with 16:9 aspect ratio.

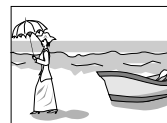
Material with this ratio will not fit to a TV with 4:3 aspect ratio.

There are two styles to display the image, "Pan&Scan" (PS) and "Letter Box" (LB).

Pan&Scan

The right and left side of the image are cut off. The image fills the screen.

- The picture will be shown in the "4:3LB" mode depending on the disc even if the "4:3PS" mode is selected.



Letter Box

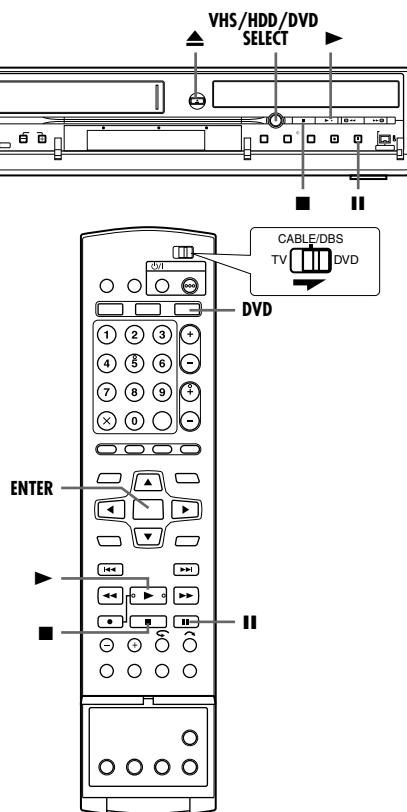
Black bands appear at the top and bottom of the image. The image itself appears in 16:9 aspect ratio.



Basic Playback



- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.



ATTENTION:

- It takes approximately 30 seconds to read a disc depending on the type and condition of the disc since this unit is multi-disc compatible (DVD-RAM, DVD-RW, DVD-R). It may even take several minutes when a disc is dirty, scratched or warped.
- It may take a few seconds to start playback. This is not a malfunction.
- Forward/reverse high-speed search and other operations cannot be performed while playback is stopped.

To play back an MP3/JPEG disc, see "Playback With MP3/WMA/JPEG Navigation" (pg. 69).

1

- Load a disc.
- For details, refer to "Placing A Disc" (pg. 10).
- Pressing **▶** also closes the disc tray.
- Playback begins automatically if an auto-playback DVD disc is loaded.

2

Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **DVD** on the remote so that the DVD lamp lights up on the unit.

3

Press **▶** to start playback.

- If you load a DVD disc whose region code does not match the unit, "REGION CODE ERROR" appears on the TV screen. For details, refer to "Region Number" (pg. 8).
- If "CAN NOT PLAY BACK DISC UNDER CURRENT SETTING" appears on the TV screen, refer to "Parental Lock" (pg. 40).
- With Video CD/SVCD discs with PBC control or some DVD discs, the menu display may appear on the TV screen after starting playback. In this case, select an item which you want to play back from the menu. Otherwise, the playback cannot go forward. Refer to "Playback Control (PBC) Function" (pg. 31) or "Locating A Desired Scene Using The DVD Menu" (pg. 28).
- The Library Database Navigation also enables you to search and select the desired titles. (pg. 64)

4

Press **||** to pause playback.

- To resume normal playback, press **▶**.

5

Press **■** to stop playback.

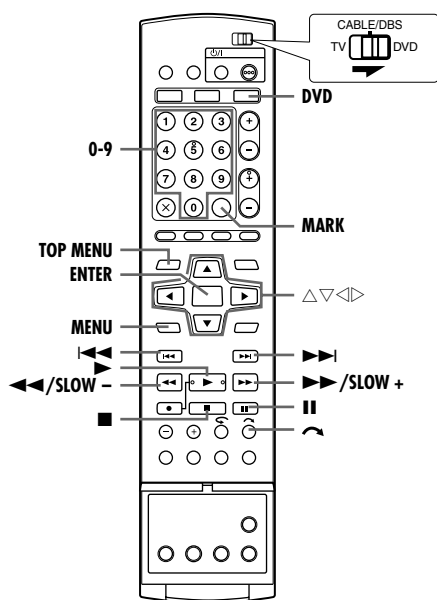
- When a recordable disc is played, playback stops and a program received with the unit's tuner resumes on the TV screen.
- When a playback-only disc is played, playback stops and the still image at the time you press **■** remains on the TV screen. Pressing **■** again resumes a program received with the unit's tuner.
- If **▲** is pressed during playback, playback stops, then the disc tray opens.

NOTES:

- When the Library Database Navigation screen appears, choose a thumbnail image of the desired title on the TV screen, then press **ENTER**. (pg. 64)
- It is not possible to playback the DVD disc recorded in 96 kHz on DVD during recording or Live Memory Playback on HDD.

Playback Features

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **DVD** so that the DVD lamp lights up on the unit.



Locating A Desired Scene Using The DVD Menu



DVD VIDEO discs may have top menu and disc menu.

Top menu

DVD discs generally have their own menus which show the disc contents. These menus contain various items such as titles of a movie, names of songs, or artist information. You can locate a desired scene by using the top menu displayed on the TV screen. Press **TOP MENU** to access the top menu.

Disc menu

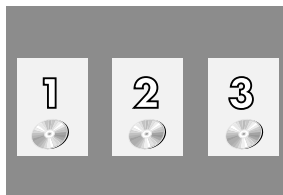
Disc menus include playback data (angle menu, subtitle menu, etc.) specific to each title.

Press **MENU** to access the disc menu.

1 Press **TOP MENU** or **MENU** to access the DVD menu.

2 Press $\triangle \nabla \triangleleft \triangleright$ to select a desired title, then press **ENTER**. Playback starts.

- It may be possible to select the desired item using the **number keys** depending on the menu display.



Example:

NOTE:

When "0" appears on the TV screen in step 1, the disc does not have a top menu or disc menu.

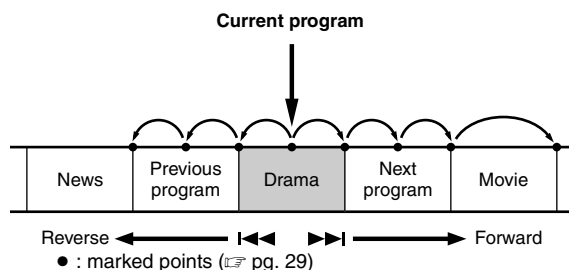
Locating The Start Point Of The Item Or Skip The Item



Press $\triangleleft \triangleleft$ or $\triangleright \triangleright$ during playback.

- Pressing $\triangleright \triangleright$ locates the start point of the item or skips the item in the forward direction, then resumes playback.
- Pressing $\triangleleft \triangleleft$ locates the start point of the item or skips the item in the reverse direction, then resumes playback.

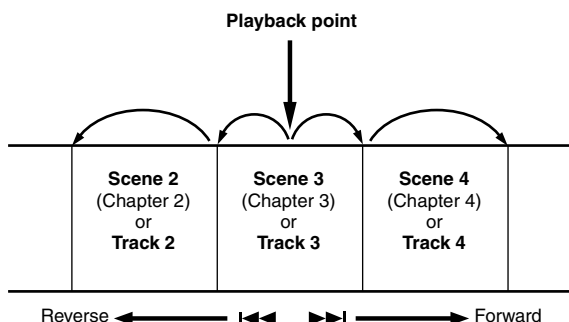
When a DVD-RAM/RW/R disc is played



Example:

To locate the beginning of the next item, press $\triangleright \triangleright$ once.
To locate the beginning of the current item, press $\triangleleft \triangleleft$ once.
To locate the beginning of the previous item, press $\triangleleft \triangleleft$ three times.

When a DVD VIDEO, Audio CD or Video CD/SVCD disc is played



Example:

To locate the beginning of the next item, press $\triangleright \triangleright$ once.
To locate the beginning of the current item, press $\triangleleft \triangleleft$ once.

High-Speed Search



During playback, press $\triangleright \triangleright$ for forward high-speed search, or $\triangleleft \triangleleft$ for reverse high-speed search.

- Each press of the button increases the search speed for each direction.
- To resume normal playback, press \triangleright .

For Audio CD

You can perform 4 levels of speed search with $\triangleright \triangleright$ and $\triangleleft \triangleleft$. (Audio is active also during high-speed search.) You cannot perform slow motion for each direction.

Still Picture/Frame-By-Frame Playback



1 Press **II** to pause during playback.

2 Press **SLOW -** (◀◀) or **SLOW +** (▶▶) to activate frame-by-frame playback.

- Each press of **SLOW -** (◀◀) or **SLOW +** (▶▶) advances/reverses the still picture frame by frame.
- Frame-by-frame playback for reverse direction cannot be performed with Video CD/SVCD discs.
- To resume normal playback, press ▶.

Slow Motion



1 Press **II** to pause during playback.

2 Press **SLOW -** (◀◀) or **SLOW +** (▶▶) for 2 or more seconds.

- Each press of **SLOW -** (◀◀) or **SLOW +** (▶▶) increases the slow motion speed for each direction (from 1/16 to 1/2 times the normal speed).
- Slow motion for reverse direction cannot be performed with Video CD/SVCD discs.

Skip Search



During playback, press ⏮.

- Each press initiates an approximately 30-second period of fast-motion playback. Normal playback resumes automatically.

Resume Function



It is possible to memorize the position where you stop playback and resume playback from that position.

- Be sure to set "RESUME" to "ON" or "DISC RESUME". (ⓘ pg. 82)

1 Press ■ during playback to memorize a resume point.

- The unit enters Resume Stop mode and memorizes the position where you have stopped playback as a resume point. (The inside of the disc status indicator on the front display panel blinks while memorizing.)

- The unit retains a memory of the resume points of the last 30 discs played back, even though they have been ejected if "RESUME" is set to "DISC RESUME". (ⓘ pg. 82)

- To clear the resume points:

(The inside of the disc status indicator stops blinking and lights.)

When "RESUME" is set to "ON":

- Press ⏻ to turn off the unit.
- Press ▲ to take out the disc.
- Press ■ in stop mode.
- Press **TOP MENU** to display the top menu, then start playback by selecting an item, etc.
- Press **MENU** to display the disc menu, then start playback by selecting an item, etc.

When "RESUME" is set to "DISC RESUME":

- Set "RESUME" to "OFF". (ⓘ pg. 82)
- Press ■ in stop mode.
- Press **TOP MENU** to display the top menu, then start playback by selecting an item, etc.
- Press **MENU** to display the disc menu, then start playback by selecting an item, etc.

2 Press ▶ in stop mode to resume playback. The unit starts playback from the resume point.

NOTES:

- "DISC RESUME" setting works on DVD VIDEO, VCD, SVCD and already finalized DVD-R/DVD-RW (video mode) discs. For other types of discs, the function under "ON" setting will be applied even if "RESUME" is set to "DISC RESUME". (ⓘ pg. 82)
- If you stop the playback of a disc for which a resume point has already been memorized, the memory will be updated with the new resume point.
- After the unit has memorized the resume points for 30 discs, remembering a new resume point will cause the unit to delete the oldest memorized point. Stopping playback of a disc for which a resume point is already stored may change the order in which the points are stored. This may potentially change the order in which points are deleted.
- When the unit memorizes a resume point for a disc, it also remembers audio language, subtitle and angle settings.
- This function may not work for some Video CD/SVCDs.
- When "RESUME" is changed to "ON" or "OFF" (ⓘ pg. 82), resume points of the discs memorized with "RESUME" set to "DISC RESUME" will be cleared.
- Resume points are memorized for each side of a double-sided disc.
- When you switch to HDD during CD playback, playback stops. The Resume Function doesn't work when you switch to DVD thereafter to playback the disc.

Marking Positions To Play Back Again Later



It is possible to mark positions (up to 999 points) where you want to play back once again later, and start playback from a marked position. Marking onto DVD-RAM/RW (VR mode only) discs when recording is helpful to locate a start point when you play back the discs later.

To mark positions:

During playback, press **MARK** at positions you want to mark.

- "MARK" appears on the TV screen. You can easily locate the marked positions using ◀◀ or ▶▶ when you play back the disc.

MARK

To delete the marked positions:

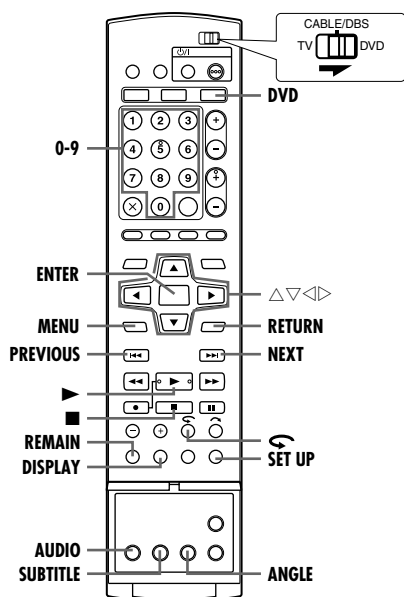
While paused, press ◀◀ or ▶▶ to locate a marked position you want to delete, then press **MARK**.

- Crossed "MARK" appears on the TV screen, and the marked position is deleted.

~~MARK~~

NOTES:

- When a monaural program changes to a stereo program while recording, a mark signal is automatically recorded.
- Titles will be divided into "chapters" at the marked points according to the disc types as follows:
 DVD-R/RW (Video mode): After finalizing, titles are divided into "chapters" at the marked points that are marked automatically approximately every 5 minutes during recording before finalizing. (ⓘ pg. 88)
 DVD-RW (VR mode): After finalizing, titles are divided into "chapters" at the marked points that are marked at the desired locations during playback before finalizing. (ⓘ pg. 88)
 DVD-RAM: Titles are divided into "chapters" at the marked points that are marked at the desired locations during playback.
 DVD VIDEO: Creating of marked points are not permitted.



Checking The Time Information



You can check time information of a disc on the front display panel and the TV screen.

Each press of **DISPLAY** changes the display as follows:

■ DVD-RAM/DVD-R/DVD-RW

During recording

Clock time (front display panel only) → Current title elapsed time

→ Disc remaining time* → (back to the beginning)

* only discs before finalizing

• Clock time is displayed only when a recordable disc is recorded.

During playback

Each title elapsed time → Current title elapsed time →

Disc remaining time* → (back to the beginning)

* only discs before finalizing

In stop mode or during playback

- It is possible to check disc remaining time according to recording modes also by pressing **REMAIN**.
- In FR mode, it is possible to set recording time in detail. While the recording mode and the disc remaining time are displayed by pressing **REMAIN**, press $\Delta \nabla$ to select "FR", then press $\triangleleft \triangleright$ to select the desired recording time. (pg. 43)
- It is not possible to switch the recording mode during playback or while recording.

■ Video CD/SVCD/Audio CD

During playback

Current track elapsed time → Current track remaining time →

Total elapsed time → Total remaining time → (back to the beginning)

In stop mode

0:00 → Playback time of track 1 → 0:00 → Total length of a disc → (back to the beginning)

NOTE:

When a PBC-compatible Video CD/SVCD disc is loaded, deactivate the PBC function. (pg. 31)

Angle Selection



You can enjoy a variety of scene angles if a DVD VIDEO disc contains "multi-angle" parts, where the same scene was shot from different angles.

If the disc contains "multi-angle" parts, "ANGLE" appears on the TV screen at the beginning of the "multi-angle" part.

1 Press **ANGLE** during playback.

The angle selection display appears on the TV screen.



When 3 scene angles are contained.

2 Press **ANGLE** or $\triangleleft \triangleright$ to select your desired angle.

- Each time you press **ANGLE** or $\triangleleft \triangleright$, the angle changes.
- When "O" appears on the TV screen, the current scene is not recorded from multiple angles. In addition, some discs prohibit angle selection.
- To clear the angle selection display, press **ENTER**. In addition, the angle selection display disappears automatically if no operation is done for 10 seconds.

Subtitle Selection



Some DVD VIDEO discs contain more than one subtitle language, from among which you can choose the desired subtitle language.

"SUB" appears on the TV screen at the beginning of the part where more than one subtitle language are recorded.

1 Press **SUBTITLE** during

playback. The subtitle selection display appears on the TV screen.



When 3 subtitle languages are contained.

- Each time you press **SUBTITLE**, the subtitle display is switched on and off.

2 Press $\triangleleft \triangleright$ to select your desired language.

- To clear the subtitle selection display, press **ENTER**.

NOTES:

- When "O" appears on the TV screen, no subtitle language is recorded.
- When the subtitle language won't be changed with the procedure above, change the subtitle on a disc menu displayed by pressing **MENU**.

Audio Language/Sound Selection



Some DVD VIDEO discs contain the multiple audio language or sound. You can select the desired audio language or sound. For some Video CD/SVCD discs, you can switch the audio channel to choose Karaoke either with or without the vocal.

1 Press **AUDIO** during playback. The Audio Language/Sound selection display appears.



When 3 audio languages are contained.

2 Press **AUDIO** or $\triangleleft \triangleright$ to select your desired audio language/sound.

- Each time you press **AUDIO** or $\triangleleft \triangleright$, the audio language/sound changes.
- To clear the Audio Language/Sound selection display, press **ENTER**.

NOTES:

- When "S" appears on the TV screen, no audio language is recorded.
- When the audio language won't be changed with the procedure above, change the audio on a disc menu displayed by pressing **MENU**.
- Pressing **AUDIO** to select the audio language/sound is only possible during playback. It is not possible to select by pressing **AUDIO** in stop mode. However, you can select the desired audio language/sound from the setup menu while in stop mode.

Audio Channel Selection



When watching bilingual programs or playing discs on which you recorded bilingual or stereo programs, you can choose the desired audio channel.

- When "SUPERIMPOSE" is set to "AUTO", you can confirm on the TV screen the audio channel you have chosen. (pg. 82)
- Each time you press **AUDIO**, the audio channel changes.



TRACK	USE
On-Screen Display	
$\triangleleft \triangleright$ L + R \triangleright	For stereo discs
\triangleleft L \triangleright	For audio of left channel
\triangleright R \triangleright	For audio of right channel

NOTE:

It is not possible for DVD-R/DVD-RW (Video mode) disc playback to switch the audio channel. The audio channel is played back as set in "VIDEO MODE RECORDING AUDIO" setting. (pg. 82)

When you can't switch the audio channel of a bilingual program

When the unit is connected with a digital audio device using an optional optical cable and "DIGITAL AUDIO OUT" is set to "DOLBY DIGITAL/PCM", it is not possible to switch the audio channel of a bilingual program recorded on a DVD-RAM or DVD-RW (VR mode) disc. (pg. 80) In this case, perform the following steps using the remote control to switch "DIGITAL AUDIO OUT" from "DOLBY DIGITAL/PCM" to "PCM ONLY".

- Press **SET UP** to access the Main Menu screen.
- Press $\triangleleft \triangleright$ to select "DVD VIDEO SET UP", then press ∇ .
- Press $\triangleleft \triangleright$ to select "AUDIO OUTPUT", then press ∇ .
- Press $\triangle \nabla$ to select "DIGITAL AUDIO OUT", then press **ENTER**.
- Press $\triangle \nabla$ to select "PCM ONLY", then press **ENTER**. (pg. 81)
- Press **SET UP** to complete the setting.
- Press **AUDIO** to select the desired audio channel.

Playback Control (PBC) Function



Some Video CD/SVCD discs support the PBC function. PBC is an abbreviation of "Play Back Control". A Video CD/SVCD disc recorded with PBC has its own menus, such as a list of the songs on the disc. You can locate a specific scene by using the menu.

1 Press \blacktriangleright in stop mode. The PBC menu appears.

2 Press the **number keys** to enter the number of the desired scene. The unit starts playback of the selected item.

- "PBC" appears on the front display panel.
- When "NEXT" or "PREVIOUS" appears on the TV screen: Pressing **NEXT** ($\blacktriangleright \blacktriangleright$) advances to the next page. Pressing **PREVIOUS** ($\blacktriangleleft \blacktriangleleft$) returns to the previous page.
- You can return to the menu by pressing **RETURN**.
- The method of the operation is different depending on the disc.

NOTES:

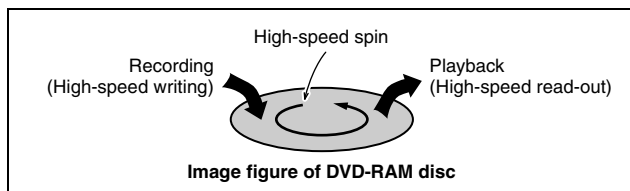
- If you want to playback a PBC-compatible Video CD/SVCD disc without activating the PBC function, start playback in stop mode by using the **number keys**, instead of the \blacktriangleright button, to choose the track, then press **ENTER**.
- To activate the PBC function when a PBC-compatible Video CD/SVCD disc is being played back without the PBC function, press **TOP MENU**, or press \blacksquare then press \blacktriangleright .

Live Memory Playback

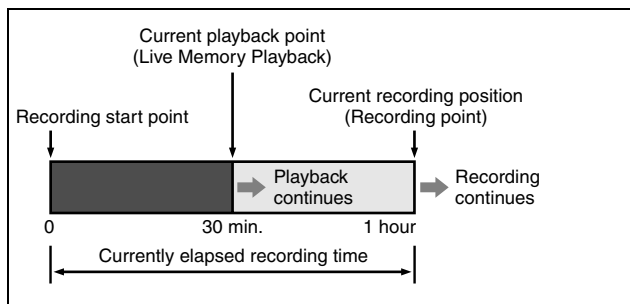


- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **DVD** so that the **DVD** lamp lights up on the unit.

This unit records pictures onto the DVD-RAM discs, instead of video tapes, then plays back the pictures recorded on the discs. This makes it possible to achieve high-speed writing and read-out that has not been possible with conventional VCRs, enabling recording and playback simultaneously.

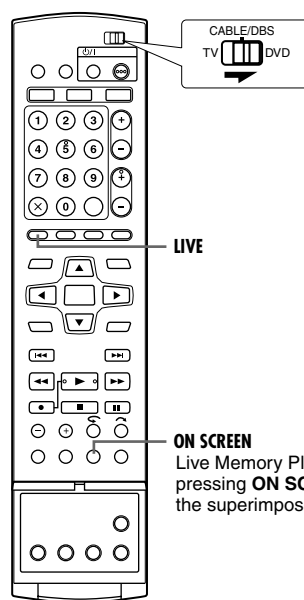


It is called "Live Memory Playback" to start playback of the program being recorded, with a time-lag between a recording point and a playback point, as shown in the figure below.



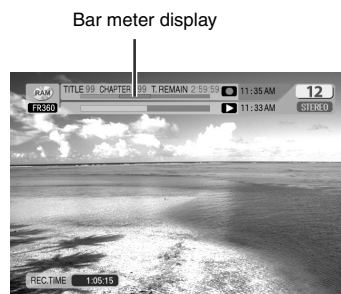
Not only can this unit play back a program previously recorded while recording or timer recording another program, but the unit also allows you to play back from the beginning of a program while continuing to record the same program.

Recording/playback Status Display



Live Memory Playback status can be checked by pressing **ON SCREEN** to display the bar meter on the superimpose display.

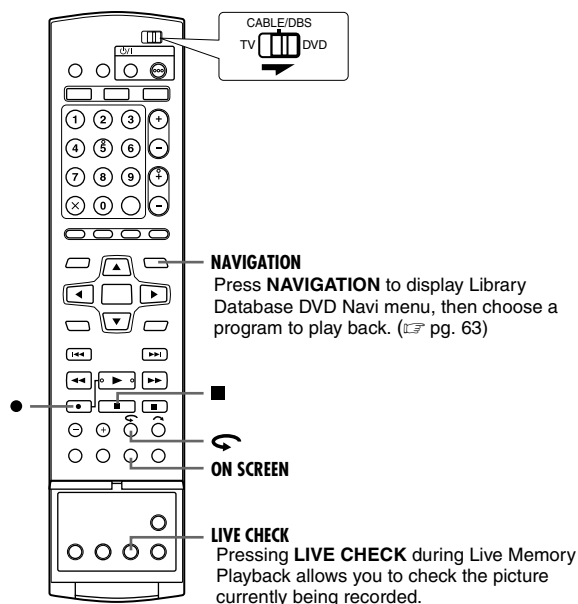
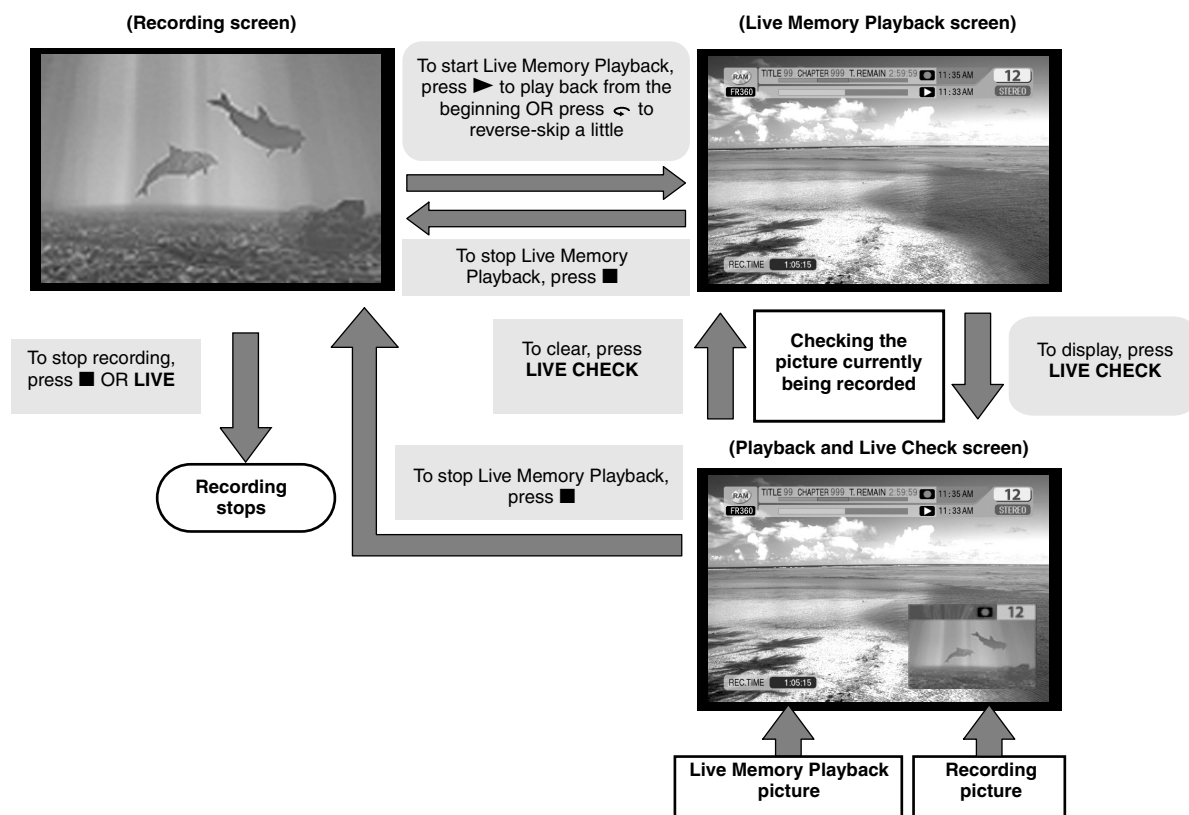
Press **ON SCREEN**. The current status is superimposed on the TV screen.



Superimpose display

Overview Of Live Memory Playback

You can play back a program you are recording from the beginning while continuing to record or timer record onto a DVD-RAM disc. This is called "Live Memory Playback".



NOTES:

- Live Memory Playback could be performed approximately 30 seconds after recording has started.
- Although high-speed search up to approximately 30 seconds before the current recording point is possible during Live Memory Playback, once the current recording point is reached, the unit resumes normal playback and maintains a delay of approximately 30 seconds so that recording and playback can continue.
- When using Live Memory Playback during timer recording, playback continues even after the end of the recording.
- When using Live Memory Playback during timer recording, playback is automatically stopped just before recording starts, and then recording starts when the time arrives for the next timer-program.
- It is impossible to perform ITR even if you press **●** during Live Memory Playback. (☞ pg. 42)
Press **■** to display the program being recorded, then perform ITR settings.
- Playback may be paused for a moment during Live Memory Playback, which does not interfere with recording.
- Live Memory Playback cannot be performed while recording the source from DV input. (☞ pg. 74, "DV Dubbing (HDD & DVD Deck Only)")
- When **LIVE CHECK** is pressed to display the picture currently being recorded, the picture size may not be correct.

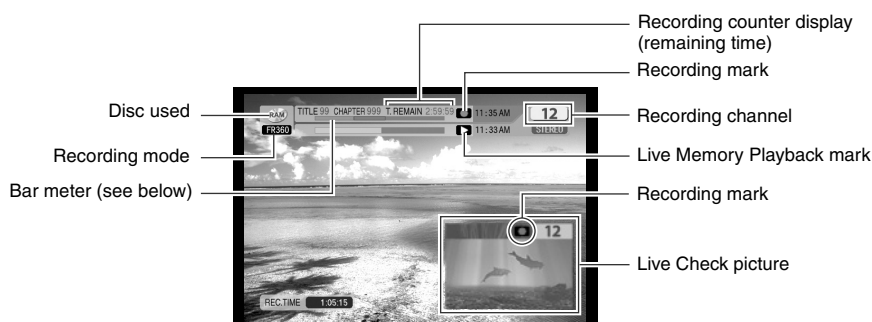
Display During Live Memory Playback

During recording, you can watch at your will what was previously recorded or is currently being recorded. It is possible to perform freely normal playback operations (forward/reverse high-speed search and variable-speed search) within the range of the red or blue bar on the TV screen.

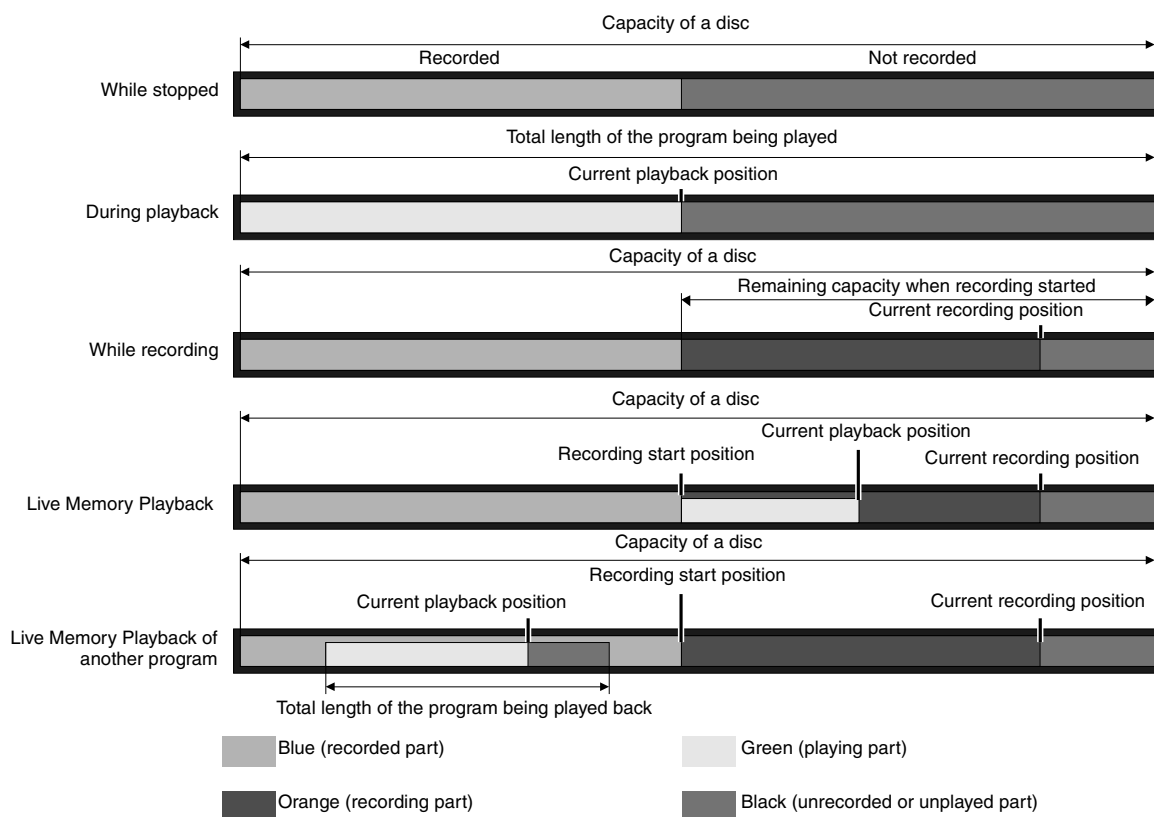
When Live Memory Playback reaches the point of 30 seconds before the current recording point by forward high-speed search or other operations, the unit returns to normal playback.

The superimpose display appears by pressing **ON SCREEN**. (pg. 16)

The Live Check picture is displayed on the bottom right corner by pressing **LIVE CHECK**.

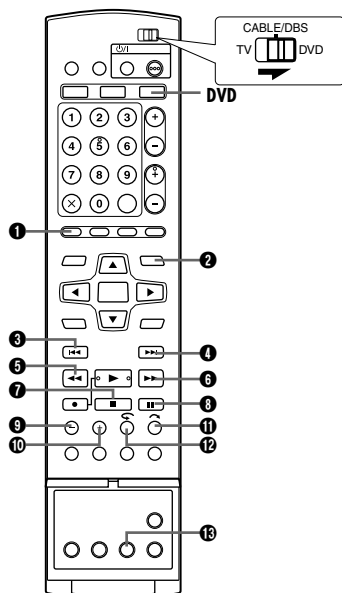


This unit displays the current recording/playback status by the bar meter.
(Example of bar meter display)



Buttons To Be Used During Live Memory Playback

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **DVD** so that the **DVD** lamp lights up on the unit.



1 LIVE

Returns to on air program screen. When a confirmation message appears by pressing this button during timer programming or title editing, etc., follow the instruction to return to the previous screen.

2 NAVIGATION

Displays Library Database Navigation menu. You can choose a title to play back.

3 ⏮

- Pressing once skips back to the beginning of the chapter being played back.
- Pressing down for 2 or more seconds during playback reverses playback at 5 times the normal speed while pressed. Releasing the button resumes normal playback.

Available only when paused

- Pressing down for 2 or more seconds reverses playback at 1/16 times the normal speed.

4 ⏭

- Pressing once skips forward to the beginning of the next chapter being played back.
- Pressing down for 2 or more seconds during playback advances playback at 5 times the normal speed while pressed. Releasing the button resumes normal playback.

Available only when paused

- Pressing down for 2 or more seconds advances playback at 1/16 times the normal speed.

5 ⏪

- Each press of the button during playback advances the playback speed in 5 steps in the reverse direction.

Available only when paused

- Each press of the button reverses the still picture frame by frame.
- Pressing down for 2 or more seconds reverses playback at 1/16 times the normal speed. Then, each press of the button reverses slow-motion at 1/16 times, 1/4 times and 1/2 times the normal playback.

6 ⏩

- Each press of the button during playback advances the playback speed in 4 steps in the forward direction.

Available only when paused

- Each press of the button advances the still picture frame by frame.
- Pressing down for 2 or more seconds advances playback at 1/16 times the normal speed. Then, each press of the button advances slow-motion at 1/16 times, 1/4 times and 1/2 times the normal playback.

7 ■

- Pressing once during Live Memory Playback or Live Memory Recording returns to the screen on air.
- Pressing twice during recording stops recording and returns to the screen on air.

8 II

Pressing once pauses playback (still picture playback). Pressing repeatedly advances the still picture frame by frame.

9 JUMP -

Each press of the button during playback or Live Memory Playback jumps back for the selected time interval and resumes playback. (pg. 49, "Jump Search")

10 JUMP +

Each press of the button during playback or Live Memory Playback jumps forward for the selected time interval and resumes playback. (pg. 49, "Jump Search")

11 ⏭

Pressing once skips forward for approximately 30 seconds and resumes playback. Pressing repeatedly skips forward continuously as many times as pressed. It is useful when skipping over unwanted sections.

12 ⏮

Pressing once skips back for approximately 30 seconds and resumes playback. Pressing repeatedly skips back for approximately 7 seconds continuously as many times as pressed. It is useful when watching sports programs, etc.

13 LIVE CHECK

Pressing once displays the picture currently being recorded and the one being played back simultaneously. Pressing successively clears the Live Check window and displays only the picture currently being played back. You can check, for example, if the program you are recording has already finished.

To Play Back From The Beginning Of The Program While Recording

You can play back a program you are recording from the beginning while continuing to record or timer record onto a DVD-RAM disc. Press ►. Live Memory Playback starts from the beginning of the program being recorded.

- Pressing ⏮ or ► allows you to locate the desired scenes.

To Move Back The Playback Position Slightly While Recording (One Touch Replay Function)

You can move back the playback position while continuing to record or timer record onto a DVD-RAM disc.

Press ⏮.

- Each press skips back for approximately 7 seconds and resumes playback.
- Pressing while paused skips back for approximately 7 seconds and resumes pause.

To Watch A Program Previously Recorded While Recording

You can play back a program you recorded previously while recording.

1 Press ► during recording. Live Memory Playback starts.

2 Press ⏮ or ► to locate the beginning of the desired program.

NOTE:

To stop playback, press ■. The program being recorded is displayed.

Using The On-screen Bar

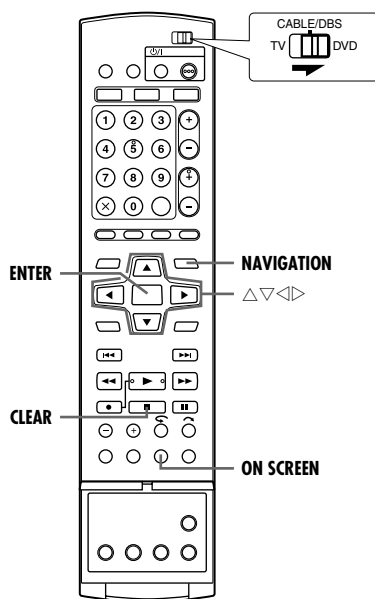


The on-screen bar allows you to control various playback functions. Some of the functions operated on Navigation Menu can be controlled on the On-screen bar.

ATTENTION:

The on-screen bar can also be used for the HDD deck.

Be sure to clear Library Database Navigation screen by pressing **NAVIGATION**.

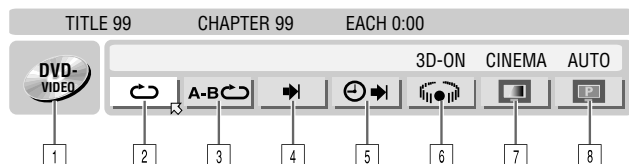


How To Access The On-screen Bar

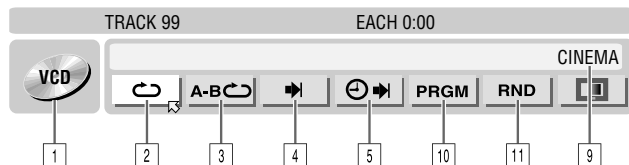
1 Press **ON SCREEN** twice whenever a disc is loaded.

Contents of the on-screen bar during playback

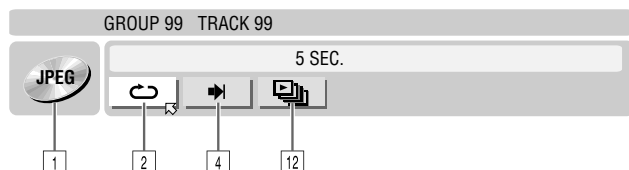
DVD VIDEO



Video CD/SVCD



JPEG disc



- 1 Disc type.
- 2 Select this for Repeat Playback. (pg. 37)
- 3 Select this for A-B Repeat Playback. (pg. 37)
- 4 Select this for search function. (pg. 37)
- 5 Select this for time search function. (pg. 38)
- 6 Select this to switch Simulated Surround Effect function. (pg. 38)
- 7 Select this for Picture Control function. (pg. 38)
- 8 Select this to switch picture source type. (pg. 39)
- 9 Current status area for the selected item.
- 10 Select this for Program Playback. (pg. 39)
- 11 Select this for Random Playback. (pg. 39)
- 12 Select this to control the switching interval of the slide show. (pg. 39)

NOTE:

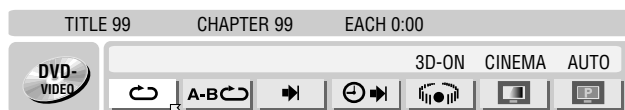
Although examples of the on-screen bar are provided here only for 3 types of discs, the on-screen bar will be displayed for whichever disc indicated in the left column.

Basic Operation On The On-screen Bar

Example: When selecting Picture Control function of DVD

During playback or while stopped

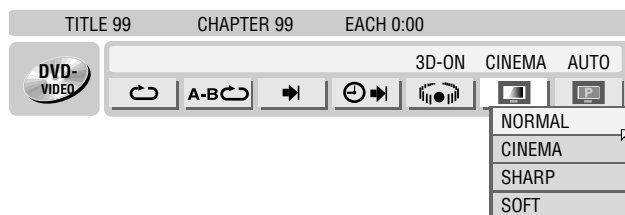
1 Press **ON SCREEN** twice to access the on-screen bar. The item currently selected is highlighted and pointed by .



2 Press to select "CINEMA", then press **ENTER**. The pop-up window appears under the selected item.



3 Press to select the desired option, then press **ENTER**.



To clear the on-screen bar
Press **ON SCREEN**.

NOTE:

See the corresponding pages for details on each menu item.

Repeat Playback



You can repeat playback as you like according to the type of disc.

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press $\triangleleft \triangleright$ to select "**A-B**", then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press $\triangle \nabla$ repeatedly to select the desired Repeat mode, then press **ENTER**.

DVD-RAM/RW/R

OFF: Repeat playback is not performed.

ALL REPEAT: The whole disc is played back repeatedly.

TITLE REPEAT: The current title is played back repeatedly.

DVD VIDEO

OFF: Repeat playback is not performed.

TITLE REPEAT: The current title is played back repeatedly.

CHAPTER REPEAT: The current chapter is played back repeatedly.

Audio CD/Video CD/SVCD/JPEG/MP3

OFF: Repeat playback is not performed.

ALL REPEAT: The whole disc is played back repeatedly.

GROUP REPEAT*: The current group is played back repeatedly.

TRACK REPEAT*: The current track is played back repeatedly.

* "GROUP REPEAT" cannot be selected for Audio CD and Video CD/SVCD discs.

* "TRACK REPEAT" cannot be selected for JPEG discs.

To clear the on-screen bar

Press **ON SCREEN**.

To cancel Repeat Playback

Repeat the above procedure from step 1, select "OFF" in step 3, then press **ENTER**.

NOTES:

- Repeat Playback is not possible for a Video CD/SVCD with PBC function.
- Repeat Playback may not work properly depending on the type of the disc being used.

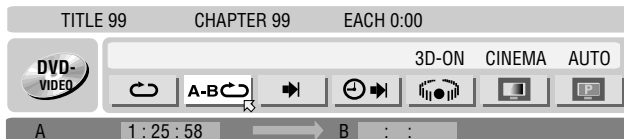
A-B Repeat Playback



You can repeat the desired part.

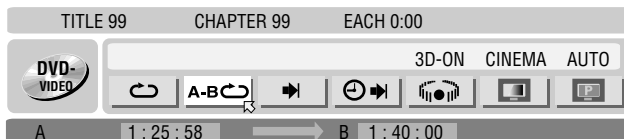
During playback

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press $\triangleleft \triangleright$ to select "**A-B**".
- 3 Press **ENTER** at the beginning of the desired part you want to repeat (point A). The elapsed playing time of the point A appears.



- 4 Press **ENTER** at the end of the desired part you want to repeat (point B). The elapsed playing time of the point B appears.

- The selected part of the disc (between point A and B) is played repeatedly.



To clear the on-screen bar

Press **ON SCREEN**.

To cancel A-B Repeat Playback

Press $\triangleleft \triangleright$ to select "**A-B**", then press **ENTER**.

NOTES:

- A-B Repeat Playback may not work properly depending on the type of disc being used.
- The subtitles recorded around the A-B point may not appear.
- When the end of the item is reached before the end point is set, the on-screen bar disappears from the TV screen. In such a case, repeat the procedure from step 1.
- The point B must be set at least 3 seconds after the point A.
- When playing back a DVD, A-B Repeat Playback is possible only within the same title.
- "**A-B**" cannot be selected during Program and Random Playback.
- "**A-B**" cannot be selected while stopped.

Locating The Beginning Of A Desired Selection



You can locate the beginning of a title, chapter, group or track.

During playback or while stopped

- 1 Press **ON SCREEN** twice to access the on-screen bar.
 - 2 Press $\triangleleft \triangleright$ to select "**SEARCH**", then press **ENTER**.
 - 3 Press $\triangle \nabla$ to select the desired item, then press **ENTER**.
- Skip this step for Video CD/SVCD and Audio CD.

For DVD-RAM/RW/R, DVD VIDEO

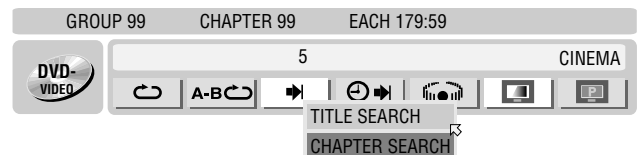
"TITLE SEARCH" or "CHAPTER SEARCH" is selectable. ("TITLE SEARCH" is selectable only while stopped.)

For JPEG, MP3

"GROUP SEARCH" or "TRACK SEARCH" is selectable.

For Video CD/SVCD, Audio CD

"TRACK" is selectable.



- 4 Press the **number keys** to enter the desired item number, then press **ENTER**.

- Playback starts from the selected section.

Examples:

- 1 To select track 5, press the **number key "5"**.
- 2 To select track 15, press the **number key "1"** and **"5"**.
- 3 To select track 25, press the **number key "2"**, then **"5"**.

If you have specified a wrong selection

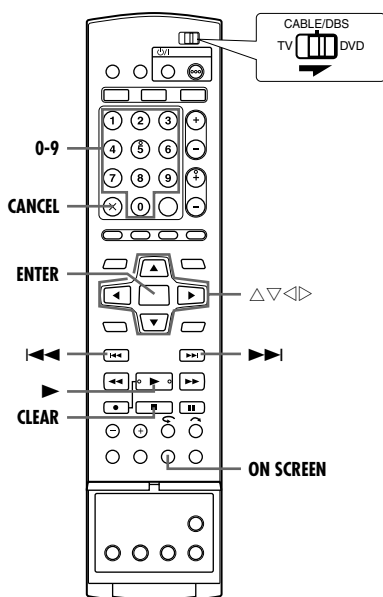
Press **RETURN** on the remote control unit and repeat the above procedures from step 2.

To clear the on-screen bar

Press **ON SCREEN**.

NOTES:

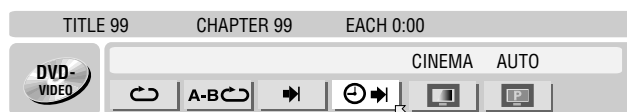
- When "S" is displayed on the TV screen in step 4, the chapter you have selected is not contained in the disc, or chapter search does not work on the disc.
- Before you press **ENTER**, playback may start automatically when you enter the section's number depending on the disc.
- This function is not possible for a Video CD/SVCD with PBC function.



Time Search

You can play back a disc from the desired point by specifying the elapsed playing time from the beginning of a program (DVD-RAM, DVD-R, DVD-RW, DVD VIDEO and HDD) or a disc (Video CD/SVCD and Audio CD).

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press $\triangleleft \triangleright$ to select $\text{⌚} \rightarrow$, then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press the **number keys** to enter the time, then press **ENTER**. Playback starts from the specified time.

Example:

To play back from a point 12 (minutes): 50 (seconds) elapsed.



If you have specified a wrong selection,

Press **RETURN** on the remote control unit and repeat the above procedures from step 2.

To clear the on-screen bar

Press **ON SCREEN**.

NOTES:

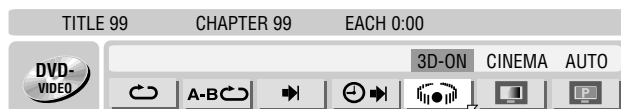
- When "⌚" is displayed on the TV screen in step 3, you have selected a point that exceeds the recording time of the disc.
- Some DVD VIDEO discs do not contain time information, and it is not possible to use the Time Search function. In such cases, "⌚" is displayed on the TV screen as well.
- This function is not possible for a Video CD/SVCD with PBC function.

Simulated Surround Effect



It is possible to get a simulated surround effect from your stereo system. You can enjoy the virtual surround sound with your 2-channel stereo system.

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press $\triangleleft \triangleright$ to select $\text{⌚} \rightarrow$, then press **ENTER**.
 - "3D-ON" appears above the selected item and Simulated Surround Effect is activated.
 - Each time you press **ENTER**, "3D-ON" appears and disappears alternately.



To clear the on-screen bar

Press **ON SCREEN**.

To cancel the simulated surround effect

Press **ENTER** to clear "3D-ON" from the screen.

NOTES:

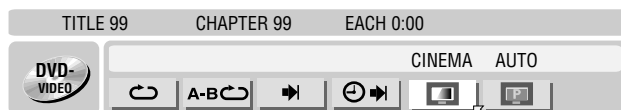
- Simulated Surround Effect works correctly only when playing back a title recorded in multichannels.
- Simulated Surround Effect does not affect the DVD VIDEO bitstream signal from the [DIGITAL AUDIO OUT] connectors.
- When Simulated Surround Effect is activated, the settings of "ANALOG AUDIO OUT" and "D. RANGE CONTROL" are disabled. (pg. 81)

Adjusting The Picture Quality



You can obtain optimal picture quality by selecting an appropriate picture mode.

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press $\triangleleft \triangleright$ to select $\text{⌚} \rightarrow$, then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press $\triangle \nabla$ to select the desired option, then press **ENTER**.

NORMAL: Normally select this option.

CINEMA: Suitable for a movie disc, etc.

SHARP: Clearer, sharper-edged picture when viewing images with lots of flat, same-colored surfaces such as cartoons.

SOFT: Select this option when too much noise appears.

To clear the on-screen bar

Press **ON SCREEN**.

Setting The Progressive Mode



You can obtain optimal picture quality by selecting whether the content on the disc is processed by field (video source) or by frame (film source).

- 1 Set the unit to the progressive scan mode. (pg. 83)
- 2 Press **ON SCREEN** twice to access the on-screen bar.
- 3 Press $\triangleleft \triangleright$ to select "**PRGM**", then press **ENTER**. The pop-up window appears under the selected item.



- 4 Press $\triangle \nabla$ to select the desired option, then press **ENTER**.
AUTO: This mode automatically detects film and video content for progressive playback. When film content is found, flag detection is used to invoke playback of film data in full screen. When video content is found, pictures from multiple fields are used to detect sections with movement, and then this movement undergoes advanced image processing for output of sharp, detailed progressive images without any reduction in image quality where movement occurs. Normally, operation in this mode is recommended.

FILM: Suitable for playing back a progressive scanned film source disc.

VIDEO: Suitable for playing back a video source disc. The outlines on the played back pictures will be soft.

To clear the on-screen bar
 Press **ON SCREEN**.

Program Playback



You can program up to 30 tracks (Video CD/SVCD or Audio CD) to play back in the desired order.

While stopped

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press $\triangleleft \triangleright$ to select "**PRGM**", then press **ENTER**. The program table appears under on-screen bar.



- 3 Press the **number keys** to enter the track numbers in the desired order.

Examples:

- 1 To select track 5, press the **number key "5"** and **ENTER**.
- 2 To select track 15, press the **number key "1"** and **"5"**.
- 3 To select track 25, press the **number key "2"** and **"5"**.



If you have specified a wrong selection

Press **CANCEL (X)**. The last selection is erased.

Or press **CLEAR (■)**. The whole selection is erased.

- 4 Press **▶**. Playback starts in the programmed order.

- When all of the programmed tracks have been played back, Program Playback stops, but the programmed information remains.
- To add tracks to the end of the program, perform steps 1 through 3.
- During Program Playback, pressing **▶▶** skips to the next selection of the program. Pressing **◀◀** returns to the beginning of the current selection.

To clear the on-screen bar and the contents of the program
 Press **ON SCREEN**.

To cancel Program Playback

Press $\triangleleft \triangleright$ to select "**PRGM**", then press **ENTER**.

NOTE:

Program Playback is not possible depending on the type of disc.

Random Playback



You can play back all the tracks on the disc in random order.

While stopped

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press $\triangleleft \triangleright$ to select "**RND**", then press **ENTER**. Playback starts in random order.



To clear the on-screen bar
 Press **ON SCREEN**.

To cancel Random Playback
 Perform steps 1 and 2.

NOTE:

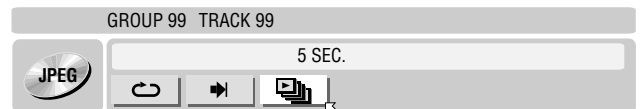
The same track will not be played back more than once during Random Playback.

Select The Switching Interval Of The Slide Show



You can control the switching interval of the slide show.

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press $\triangleleft \triangleright$ to select "**SLIDE**", then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press $\triangle \nabla$ to select the desired option, then press **ENTER**.
 • Each time you press $\triangle \nabla$, the interval changes as follows:
 5 SEC. \leftrightarrow 10 SEC. \leftrightarrow 15 SEC. \leftrightarrow 20 SEC. \leftrightarrow 25 SEC. \leftrightarrow 30 SEC. \leftrightarrow (Back to the beginning)

To clear the on-screen bar
 Press **ON SCREEN**.

NOTE:

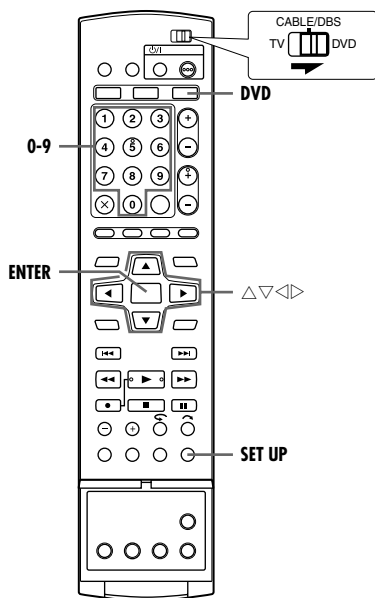
JPEG files are played back as a slide show. It may take more time to display an image with larger file size.

Parental Lock



This function restricts playback of DVD VIDEO discs which contain violent (and other) scenes according to the level set by the user. For example, if a movie which includes violent scenes supports the parental lock feature, such scenes which you do not want to let children view can be cut or replaced by other scenes.

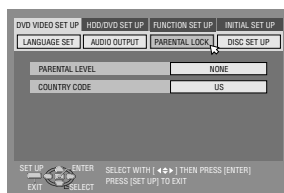
- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **DVD** so that the DVD lamp lights up on the unit.



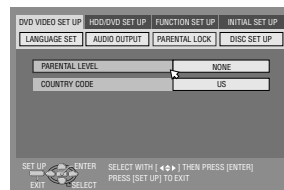
To Set Parental Lock For The First Time

While stopped

- 1 Press **SET UP** to access the Main Menu screen.
- 2 Press $\triangleleft \triangleright$ to select "DVD VIDEO SET UP", then press ∇ .
- 3 Press $\triangleleft \triangleright$ to select "PARENTAL LOCK", then press ∇ .



- 4 Press $\triangle \nabla$ to select "PARENTAL LEVEL", then press **ENTER**.
- 5 Press $\triangle \nabla$ to select the desired level, then press **ENTER**.
 - The smaller the value of level is, the more restrictive the Parental Lock level becomes.
 - Select "NONE" to cancel the restriction.



- 6 Press the **number keys** to enter your desired four-digit number, then press **ENTER**.
 - If you made a mistake, enter a correct number again.
- 7 Press $\triangle \nabla$ to select "COUNTRY CODE", then press **ENTER**.
- 8 Press $\triangle \nabla$ to select your country code, then press **ENTER**.
 - If you do not need to change your country code, jump to **10**.
 - See "Country/Area Code List for Parental Lock" (pg. 95)

9 Press the **number keys** to enter the same password as in step 6 above, then press **ENTER**.

10 Press **SET UP** to complete the setting.

NOTE:

Remember your password, or make a note of it.

To Change The Settings

You can change the Parental Lock settings later.

1 Perform steps **1** to **3** of "To Set Parental Lock For The First Time" to access the "PARENTAL LOCK" screen before continuing.

To change the level

2 Press $\triangle \nabla$ to select "PARENTAL LEVEL", then press **ENTER**.

3 Press $\triangle \nabla$ to select the desired level, then press **ENTER**.

To change the country code

4 Press $\triangle \nabla$ to select "COUNTRY CODE", then press **ENTER**.

5 Press $\triangle \nabla$ to select your country code, then press **ENTER**.

- See "Country/Area Code List for Parental Lock" (pg. 95).

6 Press the **number keys** to enter the same password as in step 6 of "To Set Parental Lock For The First Time", then press **ENTER**.

7 Press **SET UP** to complete the setting.

NOTE:

If you forget your password, enter "8888" in step 6.

To Temporarily Release Parental Lock

When you set the Parental Lock level strictly, some discs may not be played back at all. When you insert such a disc and try to play it back, the confirmation screen appears on the TV screen, asking you whether you want Parental Lock to be temporarily released or not.

1 Load a disc.

- If the disc is rated higher than the selected level, the confirmation screen appears.

2 Press $\triangleleft \triangleright$ to select "YES", then press **ENTER**.

- If you select "NO", you cannot play back that disc.

3 Press the **number keys** to enter the same password as in step 6 of "To Set Parental Lock For The First Time", then press **ENTER**.

- When you enter the correct password, the Parental Lock is released and the unit starts playback.

- If you enter a wrong password, "ENTRY ERROR" appears on the TV screen. Enter the correct password.

- If you have successively entered wrong password three times, "ENTRY ERROR CAN NOT CHANGE PASSWORD" appears on the TV screen. In such a case, press **ENTER**. The disc will stop. Then play back the disc again, and try the procedure again from step 1.

NOTE:

If you forget your password, enter "8888" in step 3.

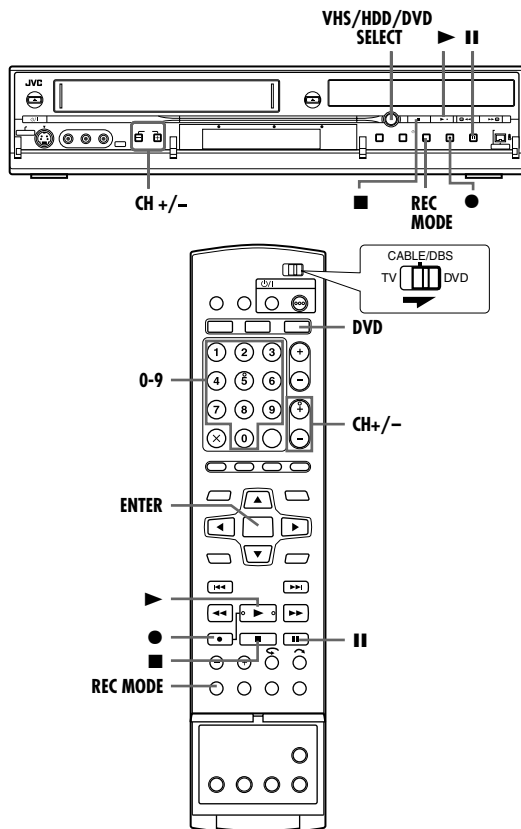
Basic Recording

DVD RAM DVD R DVD RW DVD VIDEO VCD SVCD Audio CD MP3 JPEG

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.

ATTENTION:

It is not possible to record programs on a DVD-R disc which has already been finalized.



1 Load a recordable disc.

- For details, refer to "Placing A Disc" (pg. 10).

2 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **DVD** on the remote so that the DVD lamp lights up on the unit.

3 Press **CH +/-** or the **number keys** to select the channel you wish to record.

4 Press **REC MODE** repeatedly to select the recording mode, then press **ENTER**.

- Each time you press **REC MODE**, the recording mode changes as follows: XP → SP → LP → EP → FR60–FR360* → FR420, FR480 → (Back to the beginning)

* The value is selectable from 1 to 6 hours in 5-minutes interval by pressing **◀▶** repeatedly after selecting "FR60–FR360". To change the value in 30-minutes interval, press and hold **◀▶**.

- For details on the recording mode, see the right column.

5 Press **●** on the unit to start recording. Or while holding **●**, press **▶** on the remote control.

- The DVD recording lamp lights up on the unit.

6 Press **●** and **||** on the remote control simultaneously to pause recording.

- To resume recording, press **●** and **▶** simultaneously.

7 Press **■** twice to stop recording.

- It takes about 10 seconds to end the writing session when you stop recording.

NOTES:

- It is recommended to format a DVD-RAM disc before use if you use the disc on this unit for the first time.
- When using a brand-new DVD-RW disc, format the disc either in VR mode or in Video mode. (pg. 87)
- Recordings made on DVD-R/RW disc must be finalized to play back on other DVD players. Perform "Finalize A Disc (DVD Deck Only)" (pg. 88).
- You can record up to 99 programs and 999 play lists on each disc.
- Some programs can only be recorded one time.
- When recording is started, an index of the first part of recording is automatically recorded. (pg. 63) To record satellite programs, refer to page 59. To delete the index, refer to page 65.
- Recording sometimes may stop or cannot be performed even if there is enough available capacity remaining on the disc.
- It is not possible to record on both DVD and HDD simultaneously.

Recording Mode

MPEG2 format is used as recording format. As a guide for picture quality, the "bps" unit is used to represent how much data can be recorded per second. The larger this value is, the better the picture quality becomes but more capacity is required for the recording. Select XP or SP for programs where quick movement occurs, such as sports programs, and LP or EP for talk shows, etc. with relatively less movement.

The recording modes for a 4.7 GB disc are set as follows:

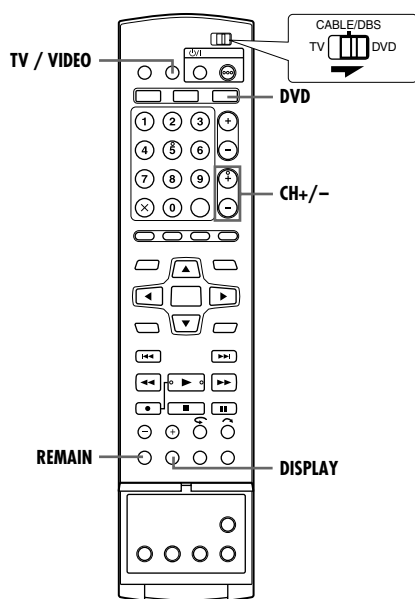
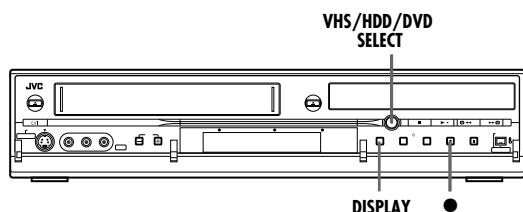
Recording mode	Recording amount (approx.)	Maximum recording time (approx.)
XP	10 Mbps	1 hour
SP	5 Mbps	2 hours
LP	2.5 Mbps	4 hours
EP	1.6 Mbps	6 hours
FR60–FR360 (pg. 43)	The amount varies depending on the selected time.	1 – 6 hours
FR420		7 hours
FR480		8 hours

- For details on FR mode, refer to "Free Rate Function" (pg. 43)

Recording Features



- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **DVD** on the remote so that the DVD lamp lights up on the unit.



Instant Timer Recording (ITR)

This easy method lets you record for from 30 minutes to 6 hours (selectable in 30-minutes interval), and shuts the unit off after recording is finished.

- 1 Press **●** on the unit to start recording.
- 2 Press **●** again to engage the ITR mode.
• On the front display panel, "0:30" appears.
- 3 If you want to record for more than 30 minutes, press **●** to extend the time. Each press extends recording time by 30 minutes.

NOTES:

- You can only perform ITR using the **●** button on the unit.
- When the recording capacity becomes full during timer recording or Instant Timer Recording, the unit automatically performs "Relief Recording" (pg. 57).

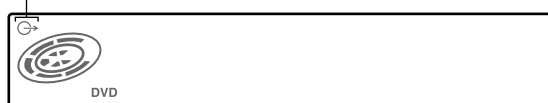
Watch Another Program While Recording On The Unit

While recording is going on, you can watch another program on the TV by using the TV's tuner.

NOTE:

It is required that the remote control is set to be able to operate the TV in advance. (pg. 78)

- 1 During recording, press **TV/VIDEO** to select TV mode if your unit is connected to the TV via the RF connection.
- VHS mode is disengaged, and the VIDEO indicator on the front display panel lights off.
- VIDEO indicator lights off.



- The program received on the TV's tuner is displayed on the TV screen.
- 2 Slide the **TV/CABLE/DBS/DVD** switch to **TV**.
 - 3 Press **CH +/-** repeatedly to select the desired channel.

Elapsed Recording Time And Disc Remaining Time Indication

During recording, press **DISPLAY** repeatedly until the desired indication appears on the front display panel.

- Each time you press **DISPLAY**, the time indication changes as follows:
Elapsed recording time → Disc remaining time → Clock → (Back to the beginning)
- You can also check the disc remaining time by pressing **REMAIN** while the unit is stopped or recording is in progress. The list of disc remaining times for all recording modes appears on the TV screen.

Free Rate Function

To record the entire program, the unit automatically sets the appropriate recording mode depending on the combination of the total time of the program to be recorded and either the remaining disc space or the specified recording time (from 60 minutes to 480 minutes).

■ To record the entire program within the actual remaining disc space (DVD deck only)

Select "FR (JUST)" in a recording mode selection procedure.

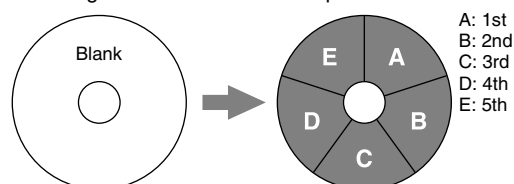
- Note that this function is available only for timer programming recording (pg. 55, 57) and dubbing from HDD to DVD (pg. 70).

■ To record the entire program by specifying the desired recording time

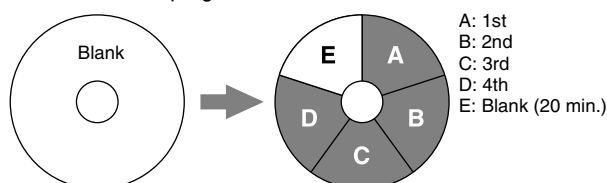
Select "FR60–FR360", "FR420" or "FR480" in a recording mode selection procedure. (pg. 41, 44, 55, 57)

■ To record a 25-min. long daily program five times just on the same DVD disc for example

Perform "VCR Plus+ C® Timer Programming" (pg. 55) procedure. Be sure to set the recording mode to "FR125" and set Weekly/Daily Rec Function to "MON–FRI" in step 8 to fit the total recording time to the whole disc space.



When the same program is recorded in SP mode instead of in "FR125", the 5th program cannot be recorded.



NOTES:

- You can program this unit to timer-record, regardless of the disc remaining time. When the disc remaining time is not enough, the unit performs "Relief Recording" (pg. 57). To avoid this, make sure of the disc remaining time before setting timer programming.
(Example) If you programmed to timer-record for 60 minutes in SP mode on a 120-minute disc, the disc remaining time would be 30 minutes in XP mode, 60 minutes in SP mode, 120 minutes in LP mode, 180 minutes in EP mode, and 240 minutes in FR480 mode. Timer-recording will not complete beyond these remaining times.
- The maximum recording time of FR (JUST) mode is the same as the recording time of FR480 mode. When timer programming a long program in FR (JUST) mode on a disc whose remaining time is short, it is recommended to check the disc remaining time in FR480 mode to see if the remaining time is enough for the program.
- Even if more than one program are timer programmed in FR (JUST) mode, only the first one is recorded.
- In order to ensure that the recording fits on the disc, this feature may leave a slight non-recorded section at the end of the disc.
- There may be some noise and sound disturbance at the point on the disc where the unit switches the mode.

Second Audio Recording

This unit's built-in MTS decoder enables reception of Multichannel TV Sound broadcast. To record a SAP program received, set "2ND AUDIO RECORD" to "ON". (pg. 82)

NOTE:

When the channel is changed on the unit;

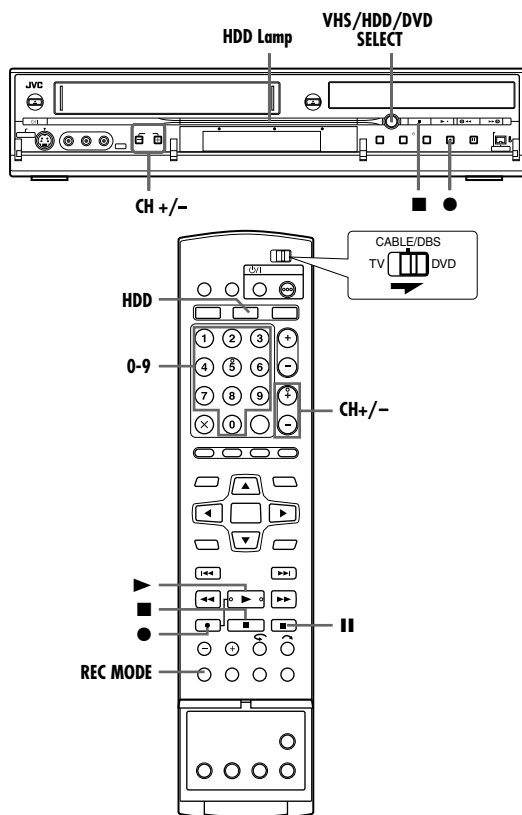
- The "MONO" indicator appears on the screen for about 5 seconds if the program is a monaural broadcast.
- The "STEREO" indicator appears on the screen for about 5 seconds if the program is a stereo broadcast.
- Both "STEREO" and "SAP" indicators appear when a stereo program is accompanied by SAP sound.
- Both "MONO" and "SAP" indicators appear when the main audio on the monaural broadcast is accompanied by SAP sound.

Basic Recording

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.

ATTENTION:

The HDD on the unit requires approximately 20 seconds to start up after the unit has been turned on, during which no operation can be made.



Pause recording on HDD deck

It is not possible to pause recording. Pressing **II** initiates Live Memory Playback.

However, it is still possible to pause recording only when recording the channels of external sources ("L-1", "F-1", and "DV"). While holding **●**, press **II** on the remote. To resume recording, while holding **●**, press **▶** on the remote.

No operation can be made with the buttons on the unit.

Recording Mode

MPEG2 format is used as recording format. As a guide for picture quality, the "bps" unit is used to represent how much data can be recorded per second. The larger this value is, the better the picture quality becomes but more capacity is required for the recording. Select XP or SP for programs where quick movement occurs, such as sports programs, and LP or EP for talk shows, etc. with relatively less movement.

Recording mode	Recording amount (approx.)	Maximum recording time (approx.)
XP	10 Mbps	18 hours
SP	5 Mbps	35 hours
LP	2.5 Mbps	70 hours
EP	1.6 Mbps	105 hours
FR60–FR360 (pg. 43)	The amount varies depending on the selected time.	18 – 105 hours
FR480		147 hours

- For details on FR mode, refer to "Free Rate Function" (pg. 43)

NOTE:

The maximum recording time stated in the above table are the approximate time under unused condition.

1 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **HDD** on the remote so that the HDD lamp lights up on the unit.

2 Press **CH +/-** or the **number keys** to select the channel you wish to record.

3 Press **REC MODE** repeatedly to select the recording mode, then press **ENTER**.

- Each time you press **REC MODE**, the recording mode changes as follows:

XP → SP → LP → EP → FR60–FR360* → FR420, FR480 →
(Back to the beginning)

* The value is selectable from 1 to 6 hours in 5 minutes interval by pressing **<|>** repeatedly after selecting "FR60–FR360". To change the value in 30 minutes interval, press and hold **<|>**.

- For details on the recording mode, see the right column.

4 Press **●** on the unit to start recording. Or while holding **●**, press **▶** on the remote control.

- The HDD recording lamp lights up on the unit.

5 Press **■** twice to stop recording.

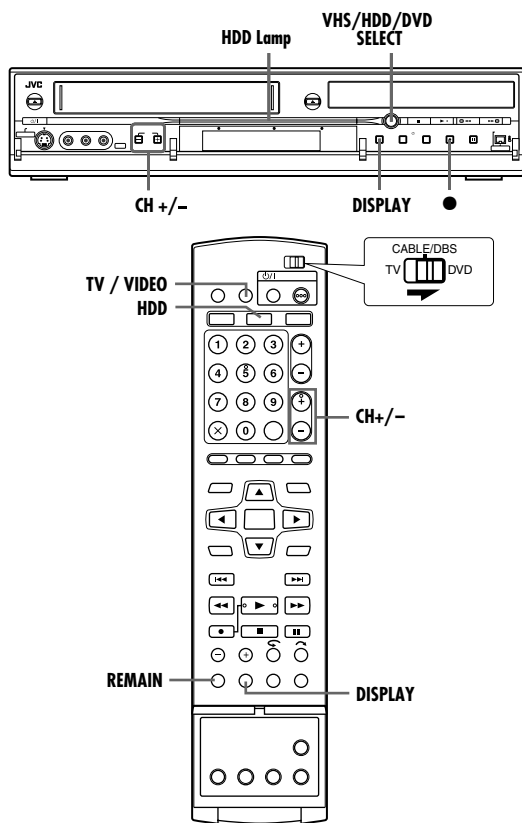
- Pressing **■** once displays the confirmation message to stop recording. Press **■** again to terminate recording.

NOTES:

- Continuous recording for over 48 hours is not possible.
- It is not possible to record on both DVD and HDD simultaneously.

Recording Features

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **HDD** on the remote so that the HDD lamp lights up on the unit.



Instant Timer Recording (ITR)

This easy method lets you record for from 30 minutes to 6 hours (selectable in 30-minutes interval), and shuts the unit off after recording is finished.

- 1 Press **●** on the unit to start recording.
- 2 Press **●** again to engage the ITR mode.
 - On the front display panel, "0:30" appears.
- 3 If you want to record for more than 30 minutes, press **●** to extend the time. Each press extends recording time by 30 minutes.

NOTES:

- You can only perform ITR using the **●** button on the unit.
- When the recording capacity becomes full during timer recording or Instant Timer Recording, the unit is automatically shut off.

Watch Another Program While Recording On The Unit

While recording is going on, you can watch another program on the TV by using the TV's tuner.

NOTE:

It is required that the remote control is set to be able to operate the TV in advance. (☞ pg. 78)

- 1 During recording, press **TV/VIDEO** to select TV mode if your unit is connected to the TV via the RF connection.

- VHS mode is disengaged, and the VIDEO indicator on the front display panel lights off.

VIDEO indicator lights off.



- The program received on the TV's tuner is displayed on the TV screen.

- 2 Slide the **TV/CABLE/DBS/DVD** switch to **TV**.

- 3 Press **CH +/-** repeatedly to select the desired channel.

Elapsed Recording Time And Disc Remaining Time Indication

During recording, press **DISPLAY** repeatedly until the desired indication appears on the front display panel.

- Each time you press **DISPLAY**, the time indication changes as follows:
Elapsed recording time → Disc remaining time → Clock → (Back to the beginning)
- You can also check the disc remaining time by pressing **REMAIN** while the unit is stopped or recording is in progress. The list of disc remaining times for all recording modes appears on the TV screen.

Second Audio Recording

This unit's built-in MTS decoder enables reception of Multichannel TV Sound broadcast. To record a SAP program received, set "2ND AUDIO RECORD" to "ON". (☞ pg. 82)

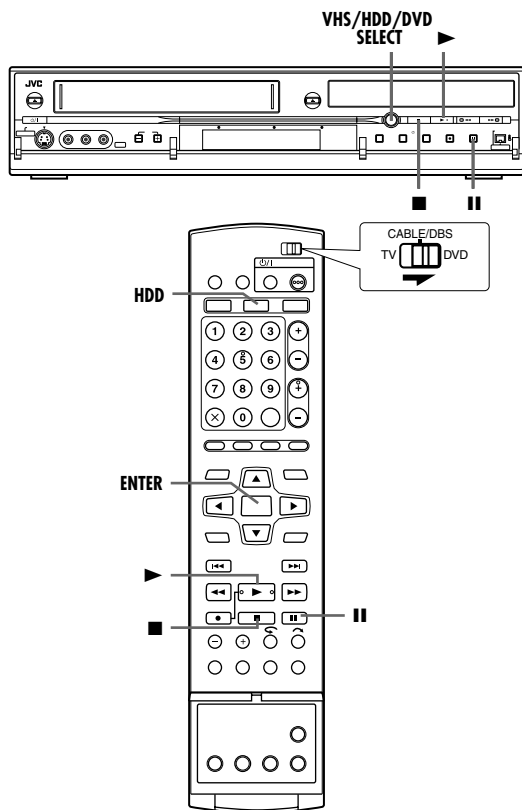
NOTE:

When the channel is changed on the unit;

- The "MONO" indicator appears on the screen for about 5 seconds if the program is a monaural broadcast.
- The "STEREO" indicator appears on the screen for about 5 seconds if the program is a stereo broadcast.
- Both "STEREO" and "SAP" indicators appear when a stereo program is accompanied by SAP sound.
- Both "MONO" and "SAP" indicators appear when the main audio on the monaural broadcast is accompanied by SAP sound.

Basic Playback

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.



ATTENTION:

- It may take a few seconds to start playback. This is not a malfunction.
- Forward/reverse high-speed search and other operations cannot be performed while playback is stopped.

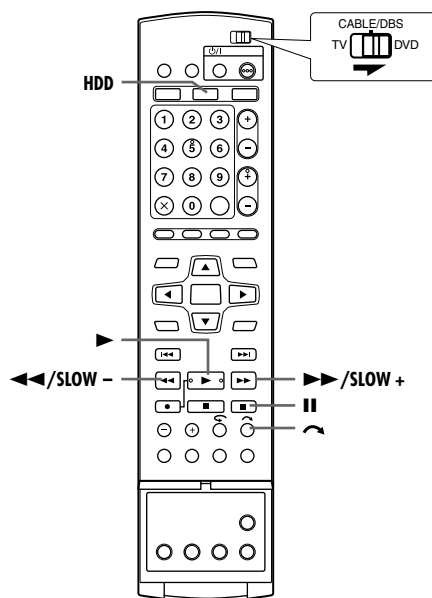
- 1 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **HDD** on the remote so that the HDD lamp lights up on the unit.
- 2 Press **▶** to start playback.
 - The Library Database Navigation also enables you to search and select the desired programs. (pg. 64)
- 3 Press **⏸** to pause playback.
 - To resume normal playback, press **▶**.
- 4 Press **■** to stop playback.

NOTE:

When the Library Database Navigation screen appears, choose a thumbnail image of the desired title on the TV screen, then press **ENTER**. (pg. 64)

Playback Features

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **HDD** so that the HDD lamp lights up on the unit.



High-Speed Search

During playback, press **▶▶** for forward high-speed search, or **◀◀** for reverse high-speed search.

- Each press of the button increases the search speed for each direction.
- To resume normal playback, press **▶**.

Still Picture/Frame-By-Frame Playback

- 1 Press **⏸** to pause during playback.
- 2 Press **SLOW -** (**◀◀**) or **SLOW +** (**▶▶**) to activate frame-by-frame playback.
 - Each press of **SLOW -** (**◀◀**) or **SLOW +** (**▶▶**) advances/reverses the still picture frame by frame.
 - To resume normal playback, press **▶**.

Slow Motion

- 1 Press **⏸** to pause during playback.
- 2 Press **SLOW -** (**◀◀**) or **SLOW +** (**▶▶**) for 2 or more seconds.
 - Each press of **SLOW -** (**◀◀**) or **SLOW +** (**▶▶**) increases the slow motion speed for each direction (from 1/16 to 1/2 times the normal speed).

Skip Search

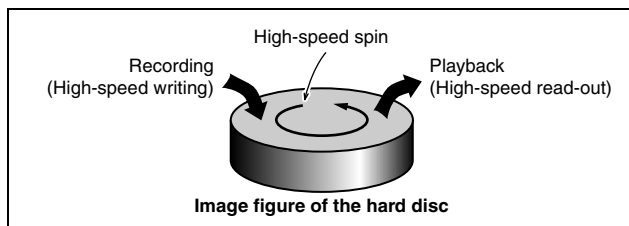
During playback, press **⏮**.

- Each press initiates an approximately 30-second period of fast-motion playback. Normal playback resumes automatically.

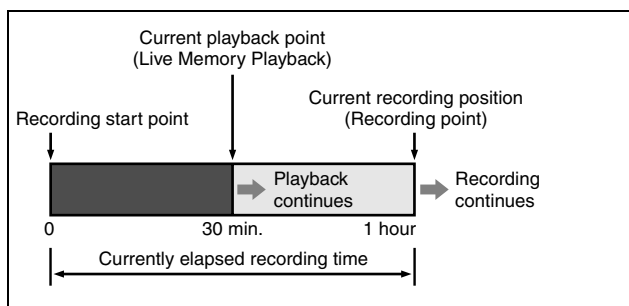
Live Memory Playback

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **HDD** so that the HDD lamp lights up on the unit.

This unit records pictures onto the hard disc, instead of video tapes, then plays back the pictures recorded on the disc. This makes it possible to achieve high-speed writing and read-out that has not been possible with conventional VCRs, enabling recording and playback simultaneously.



It is called "Live Memory Playback" to start playback of the program being recorded, with a time-lag between a recording point and a playback point, as shown in the figure below.



Not only can this unit play back a program previously recorded while recording or timer recording another program, but the unit also allows you to play back from the beginning of a program while continuing to record the same program.

Temporary recording for Live Memory

This unit automatically records the channel being received, within the specified range of time, to the reserved space on the hard disc. The time range can be set for 30 minutes, 1 hour, and 3 hours. (pg. 82)

NOTE:

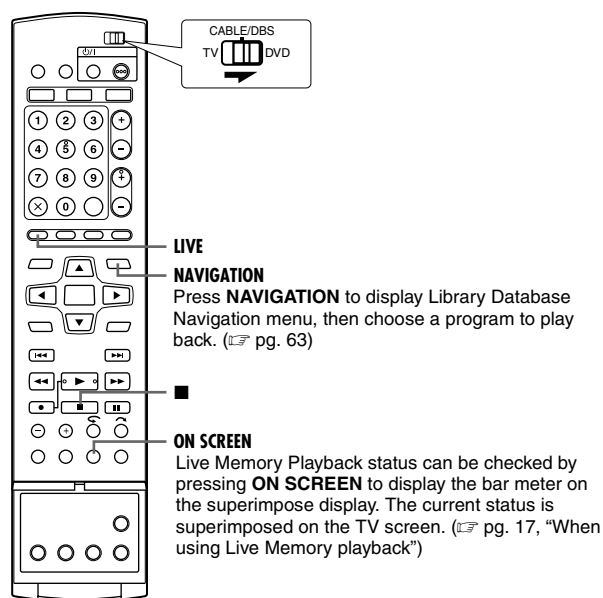
Previous temporary recordings will be overwritten since the unit is always recording the channel being received. Thus, it is not possible to play back TV programs recorded beyond the specified range of time since they are already overwritten. To avoid this in order to save titles, perform normal recording (pg. 44), timer recording (pg. 55, 57), or Live Memory Recording (pg. 49).

About limitation on temporary recording

The temporary recording for Live Memory is canceled in the following cases, and will start all over again when it is to resume.

- When the power is turned off
- When the system is powered again after a power failure was occurred
- When normal recording, timer recording, Live Memory Recording, or Automatic Satellite Program Recording (pg. 59) is performed
- When the "LIVE MEMORY" setting is changed (pg. 82)
- When tuner channel setting is performed (pg. 23)
- When dubbing is performed by pressing **DUBBING** (pg. 70)
- When "DV" is selected by pressing **CH +/-** (pg. 74)

Recording/playback Status Display

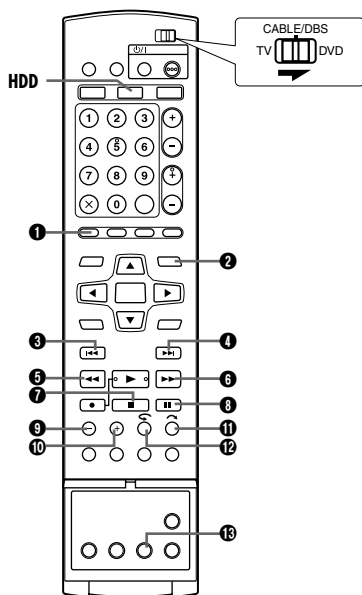


NOTES:

- Live Memory Playback could be performed approximately 30 seconds after recording has started.
- Although high-speed search up to approximately 30 seconds before the current recording point is possible during Live Memory Playback, once the current recording point is reached, the unit resumes normal playback and maintains a delay of approximately 30 seconds so that recording and playback can continue.
- When using Live Memory Playback during timer recording, playback continues even after the end of the recording.
- When using Live Memory Playback during timer recording, playback is automatically stopped just before recording starts, and then recording starts when the time arrives for the next timer-program.
- It is impossible to perform ITR even if you press **●** during Live Memory Playback. (pg. 45)
Press **■** to display the program being recorded, then perform ITR settings.
- Playback may be paused for a moment during Live Memory Playback, which does not interfere with recording.
- Live Memory Playback cannot be performed while recording the source from DV input. (pg. 74, "DV Dubbing (HDD & DVD Deck Only)")
- When **LIVE CHECK** is pressed to display the picture currently being recorded, the picture size may not be correct.
- Press **●** or **LIVE** to stop Live Memory Playback.
- Live Memory Playback cannot be performed even if the "LIVE MEMORY" in "HDD SET UP" is set to other than "OFF", as temporary recording on HDD stops during recording on DVD.

Buttons To Be Used During Live Memory Playback

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.
- Press **HDD** so that the HDD lamp lights up on the unit.



1 LIVE

Returns to on air program screen. When a confirmation message appears by pressing this button during timer programming or title editing, etc., follow the instruction to return to the previous screen.

2 NAVIGATION

Displays Library Database Navigation menu. You can choose a title to play back.

3 ⏮

- Pressing once skips back to the beginning of the chapter being played back.
- Pressing down for 2 or more seconds during playback reverses playback at 5 times the normal speed while pressed. Releasing the button resumes normal playback.

Available only when paused

- Pressing down for 2 or more seconds reverses playback at 1/16 times the normal speed.

4 ⏭

- Pressing once skips forward to the beginning of the next chapter being played back.
- Pressing down for 2 or more seconds during playback advances playback at 5 times the normal speed while pressed. Releasing the button resumes normal playback.

Available only when paused

- Pressing down for 2 or more seconds advances playback at 1/16 times the normal speed.

5 ⏪

- Each press of the button during playback advances the playback speed in 5 steps in the reverse direction.

Available only when paused

- Each press of the button reverses the still picture frame by frame.
- Pressing down for 2 or more seconds reverses playback at 1/16 times the normal speed. Then, each press of the button reverses slow-motion at 1/16 times, 1/4 times and 1/2 times the normal playback.

6 ⏩

- Each press of the button during playback advances the playback speed in 4 steps in the forward direction.

Available only when paused

- Each press of the button advances the still picture frame by frame.
- Pressing down for 2 or more seconds advances playback at 1/16 times the normal speed. Then, each press of the button advances slow-motion at 1/16 times, 1/4 times and 1/2 times the normal playback.

7 ■

- Pressing once during Live Memory Playback or Live Memory Recording returns to the screen on air.
- Pressing twice during recording stops recording and returns to the screen on air.

8 II

Pressing once pauses playback (still picture playback). Pressing repeatedly advances the still picture frame by frame.

9 JUMP -

Each press of the button during playback or Live Memory Playback jumps back for the selected time interval and resumes playback. (pg. 49, "Jump Search")

10 JUMP +

Each press of the button during playback or Live Memory Playback jumps forward for the selected time interval and resumes playback. (pg. 49, "Jump Search")

11 ⏭

Pressing once skips forward for approximately 30 seconds and resumes playback. Pressing repeatedly skips forward continuously as many times as pressed. It is useful when skipping over unwanted sections.

12 ⏮

Pressing once skips back for approximately 30 seconds and resumes playback. Pressing repeatedly skips back for approximately 7 seconds continuously as many times as pressed. It is useful when watching sports programs, etc.

13 LIVE CHECK

Pressing once displays the picture currently being recorded and the one being played back simultaneously. Pressing successively clears the Live Check window and displays only the picture currently being played back. You can check, for example, if the program you are recording has already finished.

To Play Back The Previous Part Of The Channel Currently Recording or Watching

You can play back the previous part of the channel you are recording or watching (temporarily recorded on the background) from the desired point. (☞ pg. 47, "Temporary recording for Live Memory")

- 1** Press **I◀◀** or **◀◀** to locate the point to start playback from.
 - Each press of **◀◀** increases the reverse search speed.
- 2** Press **▶** to start Live Memory Playback.
- 3** Press **■** to stop Live Memory Playback.
 - The on-air screen resumes.

NOTES:

- You can use various playback features during Live Memory Playback. (☞ pg. 46)
- If you have started actual recording by pressing **●**, pressing **■** in step **3** only resumes the on-air screen. To stop actual recording, press **■** again.

To Record From The Previous Part Of The Channel Currently Watching (Live Memory Recording)

You can start recording from the previous part of the channel you are currently watching (temporarily recorded on the background). (☞ pg. 47, "Temporary recording for Live Memory")

- 1** Press **I◀◀** or **◀◀** to locate the point to start recording from.
 - Each press of **◀◀** increases the reverse search speed.
- 2** Press **●** on the unit to start Live Memory Recording. Or while holding **●**, press **▶** on the remote control.
- 3** Press **■** to stop Live Memory Recording.
 - The on-air screen resumes.

NOTES:

- You cannot use Live Memory Recording for channels other than the channel you are currently watching.
- Recording speed is automatically set to SP mode when Live Memory Recording is started.
- Temporarily recorded data prior to the beginning of Live Memory Recording is erased when Live Memory Recording started.

To Move Back The Playback Position Slightly While Recording (One Touch Replay Function)

You can move back the playback position while continuing to record or timer record.

Press **↶**.

- Each press skips back for approximately 7 seconds and resumes playback.
- Pressing while paused skips back for approximately 7 seconds and resumes pause.

To Resume Playback Of A TV Broadcast From The Paused Point

You can resume playback of a TV broadcast you were recording or watching from the point you have paused.

- 1** Press **⏸** to pause a TV broadcast.
 - Recording continues when recording.
- 2** Press **▶** to start Live Memory Playback.
 - Playback resumes from the paused position.
- 3** Press **■** to resume the on-air screen.

1.5x Speed Search

You can play back a title quickly. (This feature can also be performed with normal playback.)

1.5x speed search cannot be performed during recording on HDD or DVD.

- 1** Press **◀◀** to locate the point to start 1.5x speed search from.
- 2** Press **▶** to resume playback.
- 3** Press **▶▶** once.
 - Pressing **ON SCREEN** displays "+X1.5" on the top right corner of the screen.

NOTE:

When the unit is connected with a digital audio device using an optional optical cable, set "DIGITAL AUDIO OUT" to "PCM ONLY". (☞ pg. 31)

Jump Search

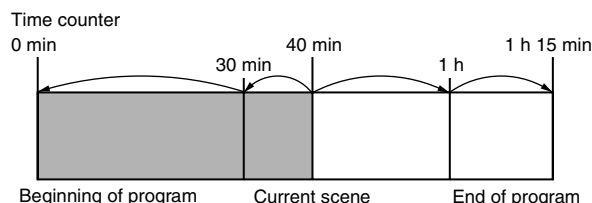
You can locate a scene ahead or behind the current one by jumping scenes according to selected time intervals (☞ pg. 82) during playback (or Live Memory Playback). This feature is also available during recording (or Live Memory Recording) or when watching a TV received program.

Press **JUMP -** or **JUMP +**.

- To advance forward or back, press **JUMP -** or **JUMP +** repeatedly within 5 seconds of each press to continue jump.
- When you cannot advance any further (beginning or end of program reached), the message "UNABLE TO GO BACK ANY MORE" appears on the screen and the on-air screen resumes. In such a case, press **I◀◀**, **◀◀** or **■**.

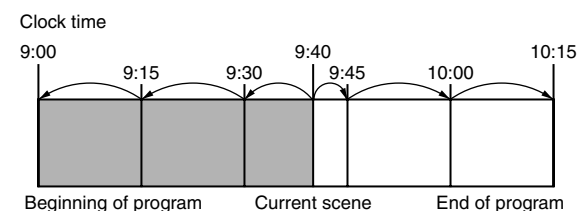
Example 1:

Playback search when jump interval is set to 30 MIN jumps



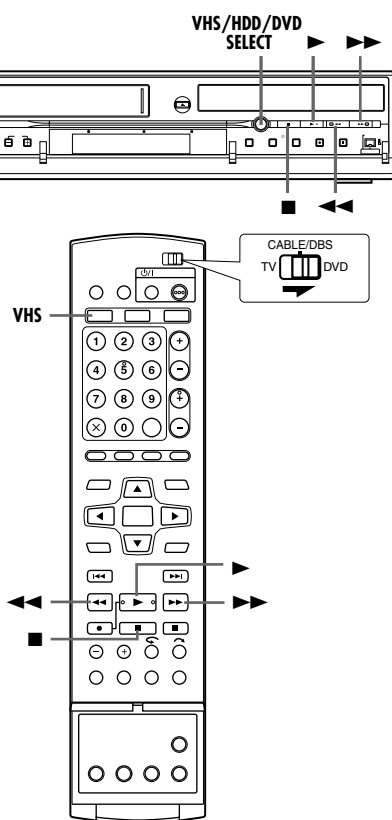
Example 2:

Recording search when jump interval is set to 15 MIN jumps



Basic Playback

- Turn on the unit.
- Turn on the TV and select the video channel (or AV mode).
- Slide the **TV/CABLE/DBS/DVD** switch to **DVD**.



1 Load a cassette. Make sure the window side is up, the rear label side is facing you and the arrow on the front of the cassette is pointed toward the unit.

- Do not apply too much pressure when inserting.
- If the record safety tab has been removed, playback begins automatically.
- The unit's power comes on automatically and the counter is reset to 0:00:00.

2 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **VHS** on the remote so that the VHS lamp lights up on the unit.

3 Find the program start point. If the tape is advanced past the start point, press ◀◀. To go forward, press ▶▶.

4 Press ▶ to start playback.

5 Press ■ to stop playback.

- To eject the cassette, press ▲ (VHS).

Clean the video heads using a dry cleaning cassette - TCL-3F - when:

- Rough, poor picture appears while a tape is played back.
- The picture is unclear or no picture appears.
- "USE CLEANING CASSETTE" appears on the screen (only with "SUPERIMPOSE" set to "AUTO"). (pg. 84)

NOTE:

The heads get dirty in the following cases:

- in an environment prone to extreme temperature or humidity
- in a dusty environment
- flaw, dirt or mold on video tapes
- continuous usage for a long time

Usable cassettes

Full-Size VHS

T-30 (ST-30**)
T-60 (ST-60**)
T-90
T-120 (ST-120**)
T-160 (ST-160**)
ST-210**

Compact VHS*

TC-20 (ST-C20**)
TC-30 (ST-C30**)
TC-40 (ST-C40**)

* Compact VHS camcorder recordings can be played on this unit. Simply place the recorded cassette into a VHS Cassette Adapter and it can be used just like any full-sized VHS cassette.

** This unit can record on regular VHS and Super VHS cassettes.

However, it will record regular VHS signals only.

- S-VHS recording is not possible with this unit.
- This unit is equipped with SQPB (S-VHS QUASI PLAYBACK) that lets you watch tapes recorded in the S-VHS format and the SP mode with regular VHS resolution.
- SQPB does not deliver Super VHS resolution.

